Curriculum Vitae of

Professor Sondipon Adhikari

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Resumè of SONDIPON ADHIKARI

Professor Adhikari holds the position of Professor of Engineering Mechanics at the James Watt School of Engineering of the University of Glasgow. He received his PhD in 2001 as a Jawaharlal Nehru Memorial Trust scholar at the Trinity College from the University of Cambridge. In 2010 he Received the Wolfson Research Merit Award from the Royal Society (UK academy of sciences). He was an Engineering and Physical Science Research Council (EPSRC) Advanced Research Fellow (2004-09) and winner of the Philip Leverhulme Prize (2007) in Engineering (given to an outstanding scholar under the age of 35).

Professor Adhikari did his BEng and MSc from The University of Calcutta (now Indian Institute of Engineering Science and Technology (IIEST), Shibpur) and Indian Institute of Science, Bangalore in 1995 and 1997 respectively. He was the holder of the inaugural Chair of Aerospace Engineering at the College of Engineering of Swansea University (from April 2007 - September 2021). Before that, he was a lecturer at Bristol University (January 2003 - March 2007) and a Junior Research Fellow at Fitzwilliam College, Cambridge (2001-03). Since 2015 he has been a Distinguished Visiting Professor at the University of Johannesburg. He was a visiting Professor at Carleton University (Canada, 2006) and a visiting scientist at the Los Alamos National Laboratory (USA, 2006). In 2008 he was an official visitor to the Cambridge University Engineering Department and a visiting Fellow of Fitzwilliam College, Cambridge. Between 2016 to 2019, he was a visiting Professor at the University of Paris East (France), The University of Texas at Austin (USA), Rice University (USA), Ecole Centrale de Lyon (France), IIT Kanpur (India), and The Central South University in Changsha (China).

Professor Adhikari's research stands on three fundamental footing - structural dynamics, probabilistic methods and computational mechanics. His research works use these basic principles to understand cutting-edge multiscale and multidisciplinary problems in applied science and engineering. He has obtained about £3.0M of competitive research funding as a principal investigator, published 5 books, 342 peer-reviewed journal papers (h-index=60, Scopus) and 203 conference papers.

Professor Adhikari founded the Flamingo Engineering Ltd in 2013 for practical applications of the latest research results. He is a technical consultant for a wind energy company (DNV GL) and an aerospace company (Embraer aircraft, Brazil) on stochastic mechanics of composite materials. His past PhD students and postdocs are currently Professors in Universities in the UK (Bath, UCL, UWS Glasgow, Cardiff), India (IIT Roorkee, IIT Madras, IIT Kanpur), Brazil (University of Brasilia) and China (Changsha, Harbin). Several of his past students are in a position of responsibility in leading industries in the UK and abroad (Sandia National Lab in USA, Rutherford Appleton Laboratory in Oxford).

Professor Adhikari is a **Fellow of the Royal Aeronautical Society (FRAeS**) and an Associate Fellow of American Institute of Aeronautics and Astronautics (AIAA). He is a member of Society for Experimental Mechanics (SEM) and The International Society for Optics and Photonics (SPIE). Professor Adhikari has been a member of the editorial board of several journals such as Computer and Structures (2017-), Advances in Aircraft and Spacecraft Science (2016-), Probabilistic Engineering Mechanics (2015-), Modelling and Simulation in Engineering (2010-), International Journal of Mathematics in Engineering, Science and Aerospace (2009-), Journal of Sound and Vibration (2009-), International Journal of Engineering Under Uncertainty: Hazards, Assessment and Mitigation (2009-) and The Open Numerical Methods Journal (2008-). He was an Associate Editor of the Shock and Vibration Journal between 2006-2011. He is a technical reviewer for over 125 international journals, 20 conferences, and 18 funding bodies. He is a member of the American Institute of Aeronautics and Astronautics (AIAA) Non-Deterministic Approaches Technical Committee (NDA-TC) and Uncertainty Quantification and Model Validation (UQMV) technical division of the Society for Experimental Mechanics (SEM). Professor Adhikari is a member of the Engineering and Physical Sciences Research Council (EPSRC) peer review college. He has been a research grant reviewer for Nuffield Foundation, NRF (National Research Foundation), South Africa, US Department of Energy and Science and Technology, book reviewer for Wiley, Elsevier/Butterworth-Heinemann Publishers and Royal Aeronautical Society.

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Sondipon Adhikari[‡,§]

1 Personal Details

Family name, First name	Adhikari, Sondipon
Date of Birth	20 April 1973
Nationality	British
Marital status	Married, one children
URL for web site	http://userweb.eng.gla.ac.uk/sondipon.adhikari
Professional Twitter	@ProfAdhikari
Researcher unique identifiers	Scopus: 24436440900, Researcher ID: A-9642-2009, Research Gate, ORCID: 0000-0003-4181-3457, Google Scholar: tKM35S0AAAAJ

2 Education

10/1997–01/2001: PhD in Engineering from the University of Cambridge (Jawaharlal Nehru Memorial Trust Scholar at the Trinity College). Thesis: Damping Models for Structural Vibration (cited over 300 times).

08/1995–09/1997: MSc from the Indian Institute of Science, Bangalore. Thesis: *Stochastic Dynamic Stiffness Method for Vibration and Energy Flow Analyses of Skeletal Structures.*

07/1991–06/1995: Bachelor of Engineering from the University of Calcutta (currently Indian Institute of Engineering Science & Technology, Shibpur), First Class (Honours).

3 Work History

3.1 Current and Past Employments

10/2021-Present: Professor of Engineering Mechanics, The University of Glasgow.

04/2007-09/2021: Chair of Aerospace Engineering, Swansea University.

01/2003–03/2007: Lecturer in dynamics: Department of Aerospace Engineering, University of Bristol.

08/2001–01/2003: Junior Research Fellow: Fitzwilliam College, Cambridge.

11/2000–12/2002: Postdoctoral Research Associate: Cambridge University Engineering Department.

3.2 Visiting and Honorary Positions

01/2020-Present: Visiting Professor, Indian Institute of Technology, Kanpur.

11/2019-01/2020: High-end foreign expert, Central South University, Changsha, China.

03/2019-05/2019: LabEx visiting Professor at Ecole Centrale de Lyon.

03/2018-04/2018: Erasmus+ Visiting Professor, Rice University, Houston, TX, USA.

05/2017-06/2017: Visiting Professor, University of Texas, Austin, TX, USA.

01/2016-02/2016: LabEx funded Visiting Professor at the University of Paris East (Universitlé Paris-Est Marne-la-Vallée), France.

06/2015-Present: Distinguished Visiting Professor, University of Johannesburg.

07/2009-06/2014: Visiting Professor, University of Johannesburg, South Africa.

05/2008-12/2008: Academic visitor to the Cambridge University Engineering Department.

06/2008-02/2009: Visiting Fellow of Fitzwilliam College, Cambridge.

[‡]aFAIAA: associate Fellow of American Institute of Aeronautics and Astronautics
[§]FRAeS: Fellow of the Royal Aeronautical Society

04/2007-04/2012: Research Fellow of University of Bristol.

07/2006-08/2006: Visiting Scientist, Los Alamos National Laboratory, Los Alamos, New Mexico, USA.

06/2006-07/2006: Visiting Professor, Carleton University, Ottawa, Canada.

09/2004-08/2009: EPSRC Advanced Research Fellow.

01/1998–10/2000: Cambridge University Engineering Department: Laboratory demonstrator for first and third year students in vibration engineering, supervisor in mechanics, structures and solid mechanics for Kings College and Pembroke College, Cambridge.

06/1996–09/1997: Project Assistant: Dynamics Laboratory, Indian Institute of Science, Bangalore.

4 Major Awards and Honours

11/2020: Included in the list of "Top 2% Scientists in the world" published by Stanford University https://buff.ly/2ZjxPPr. Ranked **10** among 27,952 researchers in the field of Acoustics.

01/2020: Awarded two Marie Skodowska-Curie Fellowships (£194,000 each) from the European Commission for the postdoctoral supervisions.

08/2019: Recognised as "High Level Foreign Talent (Category A)" by the Government of China (Issue No: 558430119730420019).

02/2019: Awarded the Newton International Fellowship (£100,500) from the Royal Society for the postdoctoral supervision of Dr A Banerjee.

10/2018: Awarded the Royal Academy of Engineering Distinguished Visiting Fellowship to host Prof R Ganguli.

07/2018: Awarded the Marie Skodowska-Curie Fellowship (£170,502) from the European Commission for the postdoctoral supervision of Dr D Karlicic.

04/2017: Elected as a Fellow of the Royal Aeronautical Society (**FRAeS**).

10/2015: Recipient of the first round of Newton-Bhabha PhD placement awards from the British Council.

06/2015: Elected as a Distinguished Visiting Professor at the University of Johannesburg.

11/2012: Elected as an Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA).

07/2011: Outstanding Paper Award Winner at the Literati Network Awards for Excellence 2011 (from the Emerald Group Publishing Limited) for the paper "Stochastic sensitivity analysis using preconditioning approach," *Engineering Computations*, Vol. 27, No. 7, 2010, pp. 841–862.

05/2010: Received the Wolfson Research Merit Award from the Royal Society, London [for 5 Years].

12/2009: Awarded the Marie Curie International Incoming Fellowship (£136,502) from the FP7 framework.

07/2009: Awarded the Newton International Fellowship (£159,000) from the Royal Society for the supervision of Dr. Sk. Faruque Ali.

11/2008: Awarded the Newton International Fellowship (£159,000) from the Royal Society for the supervision of Dr R Chowdhury.

10/2007: Philip Leverhulme Prize 2007 (given to an outstanding scholar under the age of 35 by the Leverhulme Trust in the UK, prize value £70,000).

01/2006: Member of the Winning project team in the EPSRC Ideas factory Workshop on Scientific Uncertainty and Decision Making (awarded £338,591).

06/2005: Invited to give a short course on probabilistic structural dynamics at the CISM International Centre for Mechanical Sciences, Udine, Italy.

06/2004: Included in Who's Who in Computational Science and Engineering (WWCSE) published by Saxe-Coburg Publications, UK.

05/2004: Engineering and Physical Science Research Council (EPSRC) Advanced Research Fellowship on probabilistic structural dynamics [for 5 Years].

08/2001: Junior Research Fellowship (in science and engineering) from Fitzwilliam College, Cambridge.

06/2001: Second prize from the Acoustical Society of America for the best student paper/presentation in the 141st Meeting at Chicago, USA ($150 and a certificate).

02/2000: Rouse-Ball Travelling Scholarship from Trinity College, Cambridge (£750).

04/1999: John Winbolt Prize (best student paper prize) from the Cambridge University for a single-authored paper (published independently to the PhD work) in the AIAA Journal, 37[11] (1999), pp. 1452-1458 (£1200 and a certificate).

09/1998: Overseas Research Student Award.

10/1997: Jawaharlal Nehru Memorial Trust Scholarship at the Trinity College, Cambridge.

10/1997: Honorary Nehru Cambridge Scholarships from New Delhi.

04/1991: National Scholarship for A Level results (Ranked 78 among 450 thousand examine).

5 Teaching Activities

5.1 Courses Offered

01/2017–09/2021: Swansea University, Aerospace Control Systems (EGA228), about 200 students.

10/2016–09/2017: Swansea University, Dynamics 2 (EG-360), about 170 students.

10/2013–: Swansea University, Group design project in Aerospace Engineering (EG-M62), about 25 students.

01/2013–06/2013: Swansea University, Experimental methods (EG-268), about 180 students.

01/2011–09/2015: Swansea University, Dynamics 1 (EG-260), about 300 students.

10/2008–09/2021: Swansea University, Flight Dynamics & Control (EG-M81), about 50-60 students.

10/2008-09/2010: University of Bristol, Engineering Design for Wind and Marine Power (AENG M3102) - guest lecturer (3 hours), over 120 students.

01/2003–03/2007: University of Bristol, Mechanism part of the second-year design course (AENG 21350), about 60 students.

10/2003–03/2007: University of Bristol, *Advanced Vibration Engineering* (AENG M2300), about 35 students.

5.2 Research Project Supervision

Supervision of final-year undergraduate individual projects (EG-353) and Masters level group design project (EG-M62). See Table 1 –Table 4 for the details of post-doc, PhD, Masters supervision and hosting of academic visitors. Table 5 gives the details of external supervision of research students through international funded projects.

5.3 Awards Received by Selected Students

1. 2021: Emily Georgina Nar, IMechE Best BEng Aerospace Engineering (with a Foundation Year).

Name / Current position	**Year**	**Project**	**Role**
Milan Cajic	09/2020-	Nonlinear digital metamaterials	Postdoctoral Supervisor
Shuvajit Mukherjee	08/2020-	Probabilistic optimal design of composite aerospace structures	Postdoctoral Supervisor
Tanmoy Chatterjee	12/2018-	Digital twin of complex dynamic systems, *coauthored 5 journal papers*	Co-supervisor (with M I Friswell)
Danilo Karlicic	01/2019-12/2020	Mechanical metamaterials, *coauthored 7 journal papers*	Postdoctoral Supervisor
Carl Scarth (currently, researcher Univ of Bath)	01/2016-01/2018	Multiscale stochastic dynamics, *coauthored 3 journal papers*	Postdoctoral Supervisor
Sudip Dey (currently Ast. Prof. NIT Silchar)	01/2014-06/2015	Stochastic composite dynamics, *coauthored 18 journal papers and 1 book*	Postdoctoral Supervisor
Tony Murmu (currently Ast. Prof. UWS Glasgow)	01/2010-12/2010	Nonlocal theory for nanomechanics, *coauthored 37 journal papers and 1 book*	Postdoctoral Supervisor
Sk. Faruque Ali (currently Ast. Prof. IIT Madras)	01/2010-12/2011	Stochastic control of smart systems, *coauthored 8 journal papers*	Postdoctoral Supervisor
Ruggero Gabbrielli	04/2009-11/2009	Computational geometry for nanoscale modeling	Postdoctoral Supervisor
Rajib Chowdhury (currently Ast. Prof. IIT Roorkee)	11/2008-07/2011	Uncertainty quantification and nanomechanics, *coauthored 32 journal papers*	Postdoctoral Supervisor
Y Lei (currently Prof. NUDT Changsha)	2005-06	Nonlocal damping models for distributed parameter dynamical systems, *coauthored 7 journal papers*	Co-supervisor (with M I Friswell)

Table 1: **Supervision of post-doctoral scholars.**

2. 2019: Andrew David Iain Jacques, IMechE Best BEng Aerospace Engineering (with a year in Industry).
3. 2018: Panashe Mudzi, IMechE Best BEng Aerospace Student and IMechE Best BEng Project Certificate in Aerospace.
4. 2018: Hadi Madinei, Best PhD Thesis Award, College of Engineering, Swansea University.
5. 2017: Tanmoy Mukhopadhyay, Best PhD Thesis Award, College of Engineering, Swansea University.
6. 2015: Gareth Thomas, IMechE Best BEng Aerospace Engineering (with a Foundation Year).
7. 2015: Arun Chandrasaker, IMechE Best BEng Project (Aerospace).
8. 2012: Andrew Evans, IMechE Best BEng Aerospace Engineering (with a Foundation Year).
9. 2010: Ramsay Ilyat, IMECHE certificate for the best MEng Aerospace student.
10. 2009: Robert Curran, Overall best MEng Aerospace student Award.

5.4 PhD and Other Examination Duties

1. 11/2021: External examiner (PhD), IIT Kharagpur, India.

Name / Current position	**Year**	**Project**	**Role**
Yatish Chandra	2018-	Hybrid molecular dynamics and finite element method	Supervisor
Jatin Patrick	2016-	Wave propagation in piezoelectric metamaterials	Supervisor
Athanasios Grigoriou	2018-2020	Stochastic multiscale methods for failure quantification in advanced composite structures	Supervisor
Sion Eilir Pryse	2015-2019	Reduced-order methods for stochastic dynamics. *Journal papers [37, 72]*	Supervisor
German Martinez Ayuso (currently postdoc, UCL)	2015-2019	Energy harvesting based on porous materials. *Journal papers [194]*	Co-supervisor
Tanmoy Mukhopadhyay (currently Ast. Prof, IIT Kanpur)	2014-2017	Mechanics of disordered cellular materials. *Journal papers [9, 15, 17, 18, 20, 22, 38–41, 51, 52, 71, 74, 76, 77, 192, 195–200, 283, 286]* ★ Best PhD Thesis Award 2017 from the College of Engineering	Supervisor
Hadi Madinei (currently Ast. Prof, Swansea Univ)	2014-2018	Nonlinear vibration energy harvesting. *Journal papers [139, 143, 280]* ★ Best PhD Thesis Award 2018 from the College of Engineering.	Co-supervisor
Marcela Machado (currently Ast. Prof., University of Brasilia)	2013-2016	Damage identification in stochastic systems. *Journal papers [112, 114, 310]*	Co-supervisor (with JMC Dos Santos, Campinas, Brazil)
Jin Zhang (currently Ast. Prof., University of Harbin)	2012-2015	Mechanics of metallic nanotubes and nanosheets *Journal papers [231, 234–237, 239, 241]*	Co-supervisor
Abhishek Kundu (currently Ast. Prof., Cardiff University)	2011-2014	Computational methods for time-dependent stochastic finite element problems *Journal papers [21, 25–27, 78]*	Supervisor
Blanca Pascual (currently Scientist, Rutherford Appleton laboratory)	2009-2012	Dynamic response of stochastic oscillatory systems *Journal papers. [23, 29, 42, 81]*	Supervisor
Alej Diaz De la O (currently Associate Prof., UCL)	2007-2010	Gaussian process emulators for structural dynamic analysis. *Journal papers [28, 83, 85, 292]*	Supervisor
Jonathan du Bois (currently Ast. Prof., University of Bath)	2005-2009	Active fuselage response suppression. *Journal papers [43, 121, 290, 293]*	Supervisor (Bristol)
Mohammad Khalil	2005-2009	Identification on nonlinear dynamical systems. *Journal papers [109–111, 122]*	Co-supervisor (with A Sarkar, Carleton University, Canada)

Table 2: **Supervision of PhD students.**

2. 08/2021: External examiner (MSc), Universidad de Santiago de Chile, Chile.

Name	Year	Project
Emily Nar	2021-	Inertial amplifiers for vibration control (M. Sc.)
Alan Das Mannooseril	2021-	Reduced-order uncertainty quantification of composite aerospace structures (M. Sc.)
Danial Khan	2021-	Mechanics of additively manufactured structures (M. Sc.)
Ediz Ariburun	2021-	Dynamics of functionally graded lattice structures (M. Sc.)
Micah Aargo	2020-	Optimal design of non-uniform 2D lattices (M. Sc.)
Arun Chandrashaker	2018-2019	Wave propagation in disordered cellular metamaterials (M. Sc.). *Journal paper [282]*
Emmanuel Bachy	2017-18	Multi degree of freedom vibration absorbers (M. Sc.)
Madelein Midtoy	2014-15	Uncertainty modelling for dynamics of composite structures - Finite element analysis (M. Sc.)
Alex Aylett	2013-15	Dynamic analysis of box wing structures - experimental investigations (M. Sc.)
Yatish Chandra	2011-13	Atomistic finite element method for graphene composites (M. Res). *Journal papers [200, 238, 242, 246, 248]*
Arnab Dasgupta	2010-11	Automatic blood glucose regulation using nonlinear control theory (M. Sc.)
Tom Allison	2010-11	Vibrating nano sensors for biological detection (M. Eng)
Stephan Paustian-Bulmer	2010-11	Energy harvesting at the nano-scale (M. Sc.)
Ramsay Ilyat	2009-10	Piezo-electric energy harvesting from ambient vibration (M. Eng)
Amin Hedayetullah	2009-10	Vibration energy harvesting for health monitoring of vibrating bridges (Erasmus Mundus)
Gregory Hodoli	2009-10	Structural dynamic analysis using periodic structure theory (M. Sc.)
Rob Curran	2008-09	On the design and analysis of morphing wing aircrafts & Supervisor (M. Eng)
Blanca Oliver Pascual	2007-08	Random matrix approach for the stochastic finite element method (M. Res). *Journal papers [317, 321]*

Table 3: **Masters thesis supervision.**

3. 05/2021: External examiner (PhD), NIT Silchar, India.
4. 02/2021: External examiner (PhD), IIT Kanpur, India.
5. 06/2020: External examiner (PhD), l'Universite Claude Bernard Lyon 1, France.
6. 04/2020: External examiner (PhD), IIT Guwahati, India.
7. 03/2020: External examiner (PhD), Monash University, Australia.
8. 10/2019: External examiner (PhD), IIT Kanpur, India.
9. 08/2019: External examiner (PhD), Loughborough University, UK.
10. 06/2019: External examiner (PhD), IIT Delhi, India.
11. 02/2019: External examiner (PhD), NIT Silchar, Assam, India.
12. 01/2019: External examiner (PhD), Indian Institute of Technology, Madras, India.
13. 12/2018: External examiner (MSc), University of Bristol, Bristol.
14. 11/2018: External examiner (PhD), Cardiff University, Cardiff, UK.
15. 09/2018: External examiner (PhD), Indian Institute of Science, Bangalore.

Name / Host institution	Year	Project	Role
Dr Thiago De Paula Sales (ITA, Brazil)	10/2019-11/2019	Uncertainty analysis in mechanical metamaterials	Host
Prof Bishakh Bhattacharya (IIT Kanpur)	04/2019-05/2019	Energy harvesting from fluid flow	Host
Prof Ranjan Ganguli (IISc Bangalore)	01/2019-02/2019	Digital twin for aerospace dynamic systems	Host
Prof Domingos Alves Rade, (ITA, Brazil)	09/2018-10/2018	Uncertainty analysis in mechanical metamaterials	Host
Dr Anas Batou (University of Paris-Est)	01/2015-02/2015	Viscoelastic cellular materials. *Journal paper [192]*	Host
Dr Vikas Arora (University of Southern Denmark)	07/2014-08/2018	Updating of structural dynamic models	Host
Prof S. Narayanan (Royal Society funded, IIT Madras)	06/2011-06/2013	Energy harvesting under uncertainty. *Journal papers [157, 160]*	Host
Prof Leonid Pastur (Kharkov, Ukraine)	09/2012	Random Matrix Theory. *Journal paper [43]*	Host
Prof Eric Jacquelin (Sabbatical leave, University of Lyon)	01/2011-07/2011	Stochastic problems in dynamics. *8 Journal papers*	Host
Prof. Grzegorz Litak (Lublin University of Technology, Poland)	03/2010-	Dynamics of nonlinear systems. *10 Journal papers*	Co-host (with M I Friswell)
Dr J. K. Dutt (IIT Delhi)	06/2009-08/2009	Dynamics of viscoelastically damped rotors. *Journal paper [147]*	Co-host (with M I Friswell)
Dr Y. Lei (Changsha, China)	06/2009-	Dynamics of nonlocal systems. *Journal paper [147]*	Co-host (with M I Friswell)

Table 4: **Hosting of academic visitors through funded research projects.**

16. 09/2017: External examiner (PhD), University of Liverpool, Liverpool, UK.
17. 06/2017: External examiner (PhD), University of Bristol, Bristol, UK.
18. 02/2017: External examiner (PhD), Indian Institute of Technology, Roorkee, India.
19. 01/2017: External examiner (PhD), Indian Institute of Technology, Delhi, India.
20. 11/2016: External examiner (PhD), Norwegian University of Science and Technology, Trondheim, Norway.
21. 10/2016: External examiner (PhD), Indian Institute of Information Technology Design and Manufacturing Jabalpur, India.
22. 09/2015: External examiner (PhD), Indian Institute of Technology, Roorkee, India.
23. 04/2015: External examiner (PhD), Indian Institute of Science, Bangalore, India.
24. 05/2014: External examiner (PhD), Loughborough University, Loughborough, UK.
25. 03/2014: External examiner (PhD), University of Bristol, Bristol, UK.
26. 11/2013: External examiner (PhD), University of Manchester, Manchester, UK.
27. 09/2013: External examiner (PhD), Cambridge University, Cambridge, UK.
28. 03/2013: External examiner (PhD), Indian Institute of Technology, Delhi, India.
29. 10/2012: External examiner (PhD), Nanyang Technological University, Singapore.

Name / Current position	Year	Project, Institute and Degree	Funder
Susmita Panda	2021-	Dynamics of bridges under moving loads (IIT Delhi, PhD)	DST / INSPIRE
Harsh Mirani	2021-	Topological mechanical metamaterials (IIT Kanpur, MSc)	SPARC
Soumya Patro	2020-	Vibration control of wind turbines (IIT Delhi, PhD)	DST / INSPIRE
Amanpreet Singh	2019-	Multi-physics approaches for lattice metastructures (IIT Kanpur, PhD). *Journal paper [182]*	SPARC / UKERI
Vivek Gupta	2019-	Experimental methods for mechanical meta-materials (IIT Kanpur, PhD). *Journal paper [181]*	SPARC / UKERI
Ankur Dwivedi	2019-	Wave propagation in piezoelectric metamaterials (IIT Kanpur, PhD). *Journal paper [179]*	SPARC / UKERI
Satyendra Singh	2019-	Spectral element method for composite structures (IIT Jammu, PhD). *Journal paper [309]*	DST / INSPIRE
Sudip Chowdhury	2019-	Enhanced seismic base isolation using inertial amplifiers (IIT Delhi, PhD)	DST / INSPIRE
Xiao Liu	2019-	Stochastic structural dynamics with wave finite element (Central South University, Changsha, China, MSc). *Journal paper [4]*	NSF China
Akshat Rastogi	2019-2021	Piezoelectric vortex induced vibration energy harvesting (IIT Kanpur, MSc). *Journal paper [154]*	GCRF
Subhadeep Metya	2016-2017	System reliability analysis using surrogate models (IIEST Shibpur, PhD). *Journal paper [73]*	Newton-Bhabha

Table 5: **External supervision of research students through international funded projects.**

30. 09/2012: External examiner (PhD), University of Pretoria, South Africa.
31. 05/2011: External examiner (MSc in Safety & Reliability Engineering Course), University of Aberdeen, Aberdeen, UK.
32. 05/2011: External examiner (PhD), Cambridge University, Cambridge, UK.
33. 03/2011: External examiner (PhD), Nottingham University, Nottingham, UK.
34. 03/2011: External examiner (MSc), University of Bristol, Bristol, UK.
35. 04/2007–Present: Internal examiner (PhD), Swansea University, UK.
36. 11/2006: External examiner (PhD), City University, London, UK.
37. 07/2006: External examiner (PhD), Southampton University, UK.
38. 03/2006: Student paper competition reviewer, AIAA SDM conference.
39. 07/2004: External examiner (MSc), University of Pretoria, South Africa.
40. 10/203-03/2007: Internal examiner (PhD), University of Bristol, UK.

5.5 Teaching in Cambridge Colleges

Supervision of engineering undergraduates from Kings College and Pembroke College in the following subjects:

01/1999–12/2002: second year *mechanics* course.

10/2000–12/2002: second year *structures* course.

10/2001–12/2002: third year *solid mechanics* course.

5.6 Laboratory Classes

01/2003–05/2005: University of Bristol, demonstrator for second year *vibration* laboratory.

10/2000–10/2002: University of Cambridge, demonstrator for third year *experimental modal analysis* laboratory.

10/1999–10/2001: University of Cambridge, demonstrator for first year *vibration* laboratory.

5.7 Admissions Interviews & Open Days

10/2011–09/2016: Conducted parent-tours of the facilities during the admission interview visits.

10/2010–09/2014: Interviewed candidates applying for undergraduate admission in Aerospace Engineering, Swansea University.

11/2003–Present: Interviewed candidates applying for undergraduate admission in Aerospace Engineering, University of Bristol.

5.8 Student Support and Pastoral Care

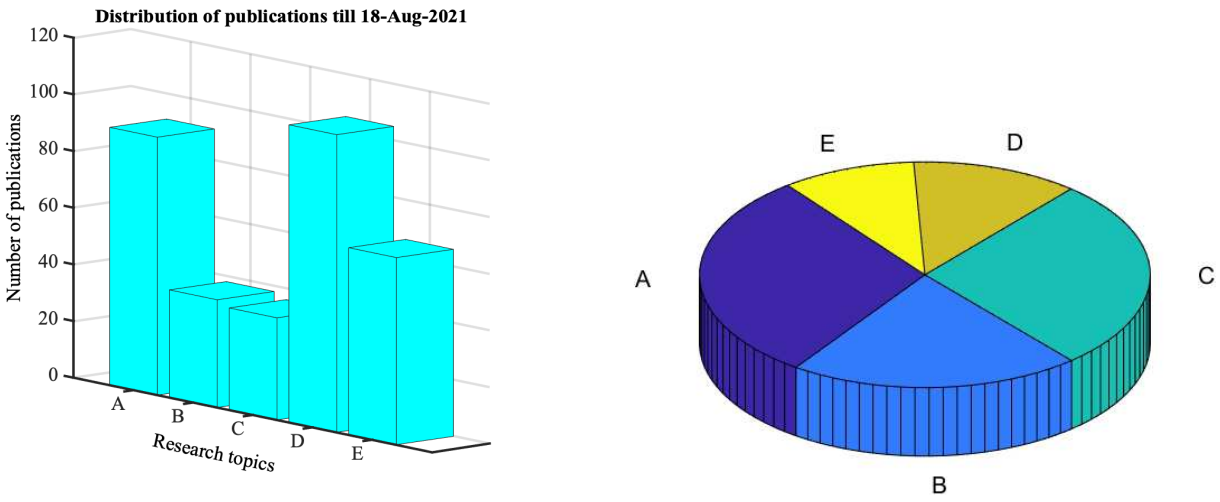
10/2003–Present: Personal tutor of 4-8 first year students and 3-5 second year students every year.

10/2011–09/2013: Member of the University appeals committee.

6 Research Activities

6.1 Broad Areas of Research

Prof Adhikari's research stands on three fundamental footings - probabilistic methods, dynamics of systems and computational mechanics. His works use these principles in the most creative way to understand cutting edge multiscale and multidisciplinary problems in applied science and engineering.



(a) Distribution of journal publications by subject

(b) Divition of journal publications by subject

Figure 1: **Journal publications by Professor Adhikari in the five areas of research (A-E) described below.**

Research focus areas and corresponding sub-areas with respective journal publications

A. ***Uncertainty quantification in computational mechanics:*** Dynamics of stochastic systems [1–35], Random eigenvalue problem [36–49], Random matrix theory for structural dynamics [50–60], Computational methods for uncertainty propagation [61–94] **(total 94)**.

B. ***Digital twins and inverse problems:*** Nanomechanical sensors [95–108], Identification of nonlinear systems [109–111], Model updating and damage detection [112–122], Identification of damping [123–129], Digital twins [130–132] **(total 38)**.

C. ***Vibration energy harvesting / wind energy:*** Nonlinear vibration energy harvesting [133–152], Energy harvesting under uncertainty [153–163], Dynamics of wind turbines [164–168] **(total 36)**.

D. ***Mechanics of materials and structures across length-scales:*** Mechanics of metamaterials [169–200], Dynamics of nonlocal continuous systems [201–215], Nonlocal magneto-elasto dynamics [216–224], Atomistic computational method - Finite element / Molecular mechanics [225–261], Structural dynamics using continuum theory [262–276] **(total 108)**.

E. ***Dynamics of complex systems:*** Discrete damped systems [277–307], Continuous systems [308–316], Nonviscously damped discrete systems [317–332], Nonlocal damped continuous systems [333–342] **(total 66)**.

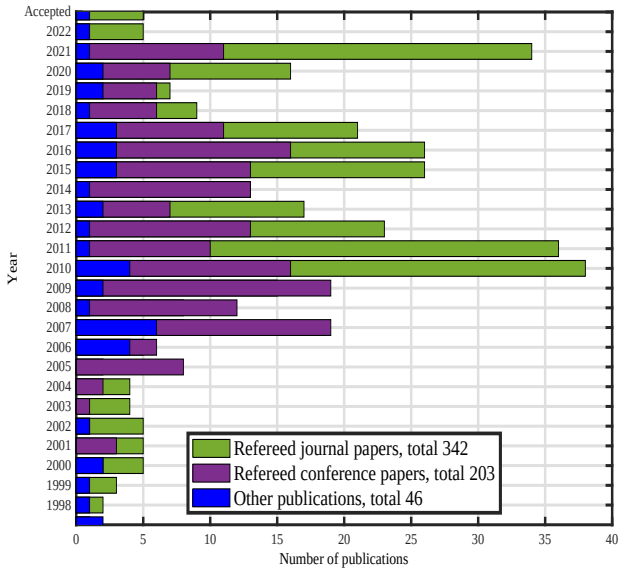
6.2 Research Publications and Impact Summary

Publications include 5 books, 3 edited books, 22 book chapters, 342 peer-reviewed journal papers, 203 conference papers, 2 book reviews and 17 non-refereed publications (details are attached). Citation data of research works are shown in Table 6 and Figure 2.

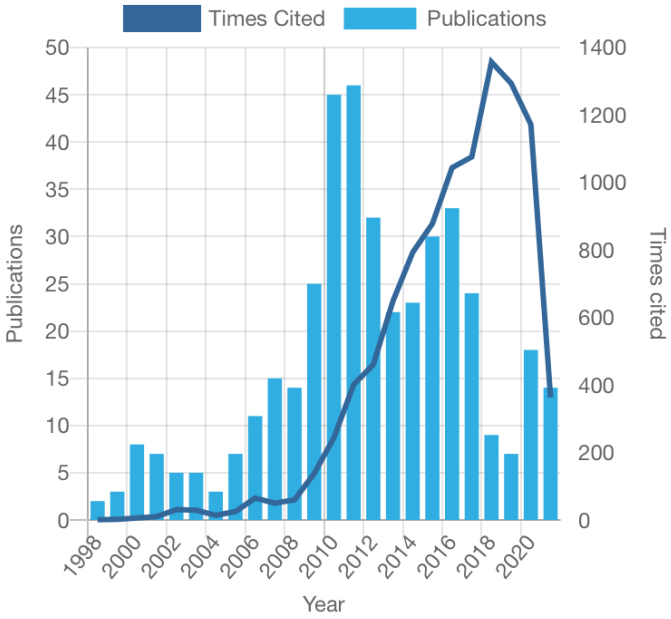
• **Past 5 years only**
Google Scholar (as on December 15, 2021): 10,514 citations, h-index = 56, i10-index = 239

Database	Number of citations	h-index	Short web-link
Researcher Id	11,037	55	http://buff.ly/1K3noqy
Scopus	12,877	61	http://bit.ly/2wsV5Ml
Google Scholar	16,908	70	http://buff.ly/1SE7u8D

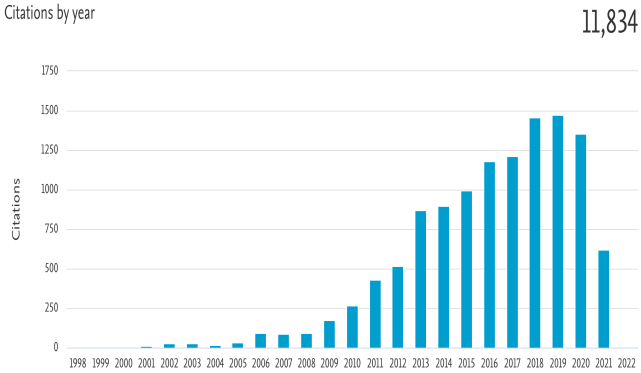
Table 6: **Research Impact Summary: Citation statistics from major academic databases.**



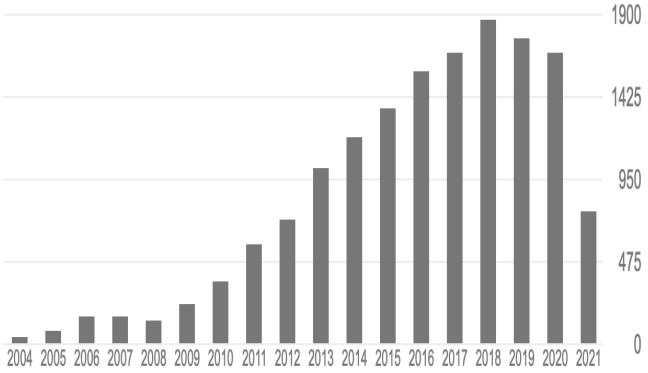
(a) Summary of all publications



(b) Citations in Researcher Id (journal papers only)



(c) Citations in Scopus



(d) Citations in Google scholar

Figure 2: **Year-by-year summary of publications and their citations from major academic databases.**

6.3 Research Grants and Contracts

6.3.1 Current Funding Awards

1. Ministry of Science and Technology of the People's Republic of China & Ministry of Education of the People's Republic of China, "The Programme of Introducing Talents of Discipline to Universities/ the 111 Project" (Central South University, Changsha), RMB 9M (≈£1M), March 2021 (4 years). (**CI**).
2. The European Commission, "Smart Tall Buildings by using Piezoelectricity in Joints (SMART-UP)" (MSCA-IF-2019-890419), €225,000 (≈£193,640), awarded January 2020 - to start from September 2021. (**PI**).
3. The European Commission, "Nonlinear Energy Sink Metamaterial Approaches for Flow-Induced Vibration Attenuation (METASINK)" (MSCA-IF-2019-896942), €225,000 (≈£193,640), awarded January 2020. (**PI**).
4. UK-India Education and Research Initiative (UKIERI), "Vibration absorption using metamaterial-based composites", (UKIERI/P1212), £14,200, August 2019. (**PI**).
5. Ministry of Human Resource Development, Government of India, SPARC, "METASANDWICH: Vibration absorption using metamaterial based composites", (SPARC/19/1212), £105,500, March 2019. (**UK PI**).
6. Embraer Aircraft Corporation, "Stochastic multiscale methods for failure quantification in advanced composite structures", (PO/902270503), £140,000, April 2018. (**PI**).
7. Engineering and Physical Sciences Research Council (EPSRC), "Digital twins for improved dynamic design", (EGR1178-100) £277,449, October 2017 (part of Swansea share of £800,000).

6.3.2 Past Research Grants

1. The Royal Society of London, Newton Mobility Grant, "Dynamics and homogenisation of smart metamaterials with random disorder" (NMG/R2/170058), £12,000, May 2018. (**PI**).
2. The Royal Society of London, Newton International Fellowship, "Mechanical Metamaterials for Low-frequency Sound and Seismic Attenuation", (NIF/R1/180371), £100,500, January 2019. (**PI**).
3. The European Commission, "Nonlinear approaches for the design of active piezoelectric metamaterials (METACTIVE)" (MSCA-IF-2017-799201), £170,000, July 2018. (**PI**).
4. Ministry of Science and Technology of the People's Republic of China, "High-end foreign expert introduction project", (G20190018004), ¥970,000 (≈£111,000 in total, applicant share £8,600), July 2019 - July 2020 (**UK PI**).
5. Organisation for Economic Co-operation and Development (OECD) - Global Challenge Research Fund (GCRF), "Flow-induced vibration energy harvesters for autonomous river health monitoring", (RIG1029-103GCRF) £14,200, February 2019. (**PI**).
6. Global Initiative of Academic Networks GIAN), Ministry of Human Resource Development, Government of India, "Reliability based robust optimisation: The future of structural design with IIT Roorkee, India", (171007L05) £8,700 December 2018.
7. Royal Academy of Engineering, Distinguished Visiting Fellowship, "Digital twins for discrete dynamic systems using deep learning", (DVFS21819/9/5), £4,000, October 2018. (**PI**).
8. Swansea University, "Texas Strategic Partnership Award with Rice University, Houston, Texas", £2,000 February 2018.
9. Global Initiative of Academic Networks GIAN), Ministry of Human Resource Development, Government of India, "Analysis and Design of Piezoelectric Vibration Energy Harvesters with IIT

Madras, India", (171003L27) £8,700 August 2017.

10. Swansea University, "International Collaboration Award with University of Texas, Austin", £2,500 February 2017.
11. Newton-Bhabha Fund, "Reliability analysis of slope stability using finite element" (N-B-10), £11,550, October 2015. (**PI**).
12. Sêr Cymru National Research Network in Advanced Engineering and Materials, "Reduced order modelling and error estimates for time varying stochastic systems" (NRN125), £59,516, July 2015. (**PI**).
13. Sêr Cymru National Research Network in Advanced Engineering and Materials, "A multiscale approach for uncertainty quantification in composite structures" (NRN102), £82,977, July 2014. (**PI**).
14. Sêr Cymru National Research Network in Advanced Engineering and Materials, "Ambient piezoelectric vibration energy harvesting exploiting impact nonlinearity" (NRN103), £58,800, July 2014.
15. Embraer Aircraft Corporation, "Robust aeroelastic tailoring in presence of combined uncertainties" (PO-901297447), £135,000, January 2014. (**PI**).
16. Swansea University, Zienkiewicz Fund on "Stochastic multiscale dynamic systems", £78,925, December 2013. (**PI**).
17. Embraer Aircraft Corporation, "Uncertainty in dynamics of a composite H-tail" (PO-901041916), £41,500, July 2012. (**PI**).
18. The Royal Society of London, International Joint Project on "Energy Harvesting from Randomly Excited Nonlinear Oscillators", £12,000, January 2011. (**PI**).
19. Swansea University, Zienkiewicz Fund on "Novel projection schemes for stochastic finite element analysis", £75,870, January 2011. (**PI**).
20. The Royal Society of London, Wolfson Research Merit Award on "Uncertainly quantification in multi-scale computational simulations", £110,000, March 2010. (**PI**).
21. The European Commission, Marie Curie International Incoming Fellowship on "HYbrid approach for Finite Element Model Updating with Stochasticity (HY-FEMUS)", £136,502. December 2010. (**PI**).
22. The Royal Society of London, Newton International Fellowship on "Dynamics and Control of Smart Structural Systems with Uncertainty", £159,000, August 2009. (**PI**).
23. Swansea University, University Bursary on "Uncertainty propagation in structural dynamics", £50,450, January 2009. (**PI**).
24. The Royal Society of London, Newton International Fellowship on "Structural Health Monitoring of Aerospace Vehicle under Uncertain Environments", £159,000, November 2008. (**PI**).
25. The Royal Society of London, "Short Visits from the UK to the University of Johannesburg, South Africa", £3,250, October 2008. (**PI**).
26. The Leverhulme Trust, "Philip Leverhulme Prize", £70,000. (**PI**), September 2007.
27. Engineering and Physical Sciences Research Council (EPSRC), "Coupled models: Expert Judgement, Emulators and Model Uncertainty", EP/E018084/1 (Ideas Factory funding), £338,591, January 2006 (share as the **PI**: £69,500).
28. Engineering and Physical Sciences Research Council (EPSRC), "Rethinking Human Reliability

Analysis Methodologies", EP/E017800/1, £80,769, January 2006 (share as the **PI**: £8,600).

29. The Royal Society of London, "Short Visits from the UK to Carleton University, Canada", £3,851, May 2006. (**PI**).
30. The Royal Society of London, "Conference grant", (2005/R1), £1,240, March 2005. (**PI**).
31. Engineering and Physical Sciences Research Council (EPSRC), Advanced Research Fellowship, "Safety-based optimal design in structural dynamics" (GR/T03369/01), £205,251, September 2004. (**PI**).
32. Engineering and Physical Sciences Research Council (EPSRC), Advanced Research Fellowship linked grant, "Safety-based optimal design in structural dynamics" (GR/T03376/01), £29,262, September 2004. (**PI**).
33. Engineering and Physical Sciences Research Council (EPSRC), "CASE for new academics" (CASE/CNA/03/35), £46,000, October 2003. (**PI**).
34. Augusta-Westland Helicopters Limited, "Smart lag damper project" (E/RMSG/REH/1371), £18,000, August 2003.
35. The Royal Society of London, "Conference grant", (RSS/SG/29194/031/C3), £1,220, June 2003. (**PI**).

6.4 Invention Disclosures and Patents

1. *Vibration absorbing piezoelectric energy harvester*, Inventor: S Adhikari, provisional application filed.
2. *Patterned pressurised honeycomb metamaterial*, Inventor: S Adhikari, provisional application filed.

6.5 Entrepreneurial Activities

May 2013: Founded the spin-off company **Flamingo Engineering ltd**

6.6 Selected Invited Lectures

Lecture slides are available from: https://www.slideshare.net/SondiponAdhikari/

6.6.1 Plenary, Semi-plenary and Keynote Lectures

1. **Inaugural Session Plenary:** *The role of microstructure uncertainty on broadband homogeneous properties of lattice materials*, The 8th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2021), Athens, Greece, 28 June 2021 (online).
2. **Plenary:** *Dynamic characteristics of 2D lattice metamaterials*, The International Conference on Futuristic Technologies (FTE21), Delhi, India, 23 January 2021 (online).
3. **Keynote:** *Homogeneous dynmaic properties of 2D lattices*, 1st Online International Conference on Recent Advances in Computational and Experimental Mechanics, Indian Institute of Technology, Kharagpur, India, 5 September 2020 (online).
4. **Plenary:** *Projection methods for stochastic structural dynamics*, The 14th International Conference on Vibration Engineering and Technology of Machinery (VETOMAC XIV), Lisbon, Portugal, 12 September 2018.
5. **Keynote:** *Dynamics and homogenised elastic properties of irregular cellular metamaterials*, The Thirteenth International Conference on Computational Structures Technology (CST2018), Sitges,

Barcelona, Spain, 4 September 2018.

6. **Inaugural Session Plenary:** *Dynamic homogenization of randomly irregular metamaterials*, International Conference on Mechanics of Advanced Materials and Structures (ICMAMS), Torino, Italy, 18 June 2018.
7. **Semi-Plenary:** *Dynamics and homogenization of disordered lattice metamaterials*, Second International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2017), Rhodes Island, Greece, 16 June, 2017.
8. **Keynote:** *Homogenisation and dynamics of randomly irregular metamaterials*, Medyna 2017: 2nd Euro-Mediterranean Conference on Structural Dynamics and Vibroacoustics, Sevilla, Spain, 27 April 2017.
9. **Keynote:** *Mechanics of irregular honeycomb structures*, Sixth International Congress on Computational Design Optimization and Simulation (ICCMS 2016), Mumbai, India, 28 June 2016.
10. **Keynote:** *Computational methods for nano-mechanical sensors*, 13rd International Conference on Innovations in Automation and Mechatronics Engineering (ICIAME2016), Gujarat, India, 5 February 2016.
11. **Keynote:** *Dynamic response of structures with uncertain properties*, 13th International Probabilistic Workshop 2015 (IPW 2015), Liverpool, UK, 5 November 2015.
12. **Plenary:** *Overview of UQ&M SIG in High Value Manufacturing*, EPSRC State of the Art in Simulation and Design Workshop, Birmingham, UK, 16 July, 2015.
13. **Keynote:** *Uncertainty quantification using surrogate models*, Uncertainty Quantification in High-value Manufacturing: Exploring the Opportunities, London, UK, 29 June 2015.
14. **Plenary:** *Computational methods for nanoscale bio-sensors*, Fifth Serbian Congress on Theoretical and Applied Mechanics and Engineering (SSM 2015), Belgrade, Serbia, June, 2015.
15. **Semi-Plenary:** *Homogenization and ergodicity of random lattices - A physics based approach*, International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2015), Island of Crete, Greece, 26 May, 2015.
16. **Keynote:** *Spectral function approach for stochastic structural dynamics*, Engineering Nonlinearity Workshop, Swansea, UK, 12 January 2015.
17. **Keynote:** *Nonlocal modal analysis for dynamical systems*, International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2013), Kos Island, Greece, 13 June 2013.
18. **Keynote:** *Uncertainty propagation is structural dynamics: Theory and applications*, International Symposium on Dynamic Problems of Mechanics (DINAME 2013), Búzios, Brazil, 19 February 2013.
19. **Keynote:** *Novel reduced Galerkin projection schemes for stochastic dynamical systems*, at Uncertainties 2012, Maresias, Sao Sebastiao, Sao Paulo, Brazil, 28 February 2012.
20. **Keynote:** *Uncertainty quantification in structural dynamics: A reduced random matrix approach*: at the 5th International ASRANet Conference (ASRANet 2010), Edinburgh, Scotland, 14 June 2010.
21. **Keynote:** *Collocation based high dimensional model representation for stochastic partial differential equations*: at the Fourth European Congress on Computational Mechanics (ECCM 2010), Paris, France, 20 May 2010.

6.6.2 Other Invited Talks (research seminars, meetings)

1. *Mechanics of irregular honeycomb structures*, Indian Institute of Engineering Science and Technology, Shibpur, India, 19 March 2021 (online).
2. *Homogeneous dynamic characteristics of lattice Materials*, Advanced Materials for Defence Applications, Indian Institute of Technology, Roorkee, India, 8 December 2020 (online).
3. *Uncertainty quantification in structural dynamics: Projection methods*, Changsha University of Science & Technology (CUST), Changsha, China, 19 December 2019.
4. *Dynamics and homogenised properties of disordered cellular structures*, National University of Defense Technology, Changsha, China, 18 December 2019.
5. *Dynamics of structures with uncertainties: Frequency domain methods*, Central South University (CSU), Changsha, China, 18 December 2019.
6. *Random field simulation over curved surfaces: Application to computational structural mechanics*, Embraer, Sao Jose Dos Campos, Brazil, 12 July 2019.
7. *Reduced order methods for stochastic buckling of composite plates*, Federal University of Minas Gerais (UFMG), Belo Horizonte, Brazil, 9 July 2019.
8. *Dynamic response of structures with uncertainties: Reduced-order methods*, Univesidade Federal de Pernambuco (UPFE), Recife, Brazil, 4 July 2019.
9. *Aerospace engineering research in Swansea University*, Algerian Space Agency Satellite Development Centre, Oran, Algeria, 25 June 2019.
10. *Mechanics of geometrically disordered cellular materials*, Warwick Centre for Predictive Modelling, Warwick University, UK, 10 June 2019.
11. *Dynamic equivalent properties of regular and disordered cellular metamaterials*, Indian Institute of Technology, Roorkee, India, 4 March 2019.
12. *Introduction to the mechanics of disordered lattice mechanical metamaterials*, Indian Institute of Technology, Kanpur, India, 25 February 2019.
13. *Introduction to the mechanics of disordered lattice mechanical metamaterials*, Rice University, Houston, TX, USA, 5 April 2018.
14. *Dynamic homogenisation of randomly irregular viscoelastic metamaterials*, University of Texas at Austin, Austin, TX, USA, 24 May 2017.
15. *Mechanics of randomly irregular metamaterials*, Indian Institute of Science, Bangalore, India, 30 June 2016.
16. *Uncertainty quantification in the dynamics of composite structures*, Aeroelastic Tailoring Workshop, Seoul, Korea, 2 June 2016.
17. *Dynamics of structures with uncertain properties*, Universitlé Paris-Est Marne-la-Vallée, Paris, France, 21 January 2016.
18. *Dynamics of structures with uncertainties: Applications to piezoelectric vibration energy harvesting*, Structural Mechanics and Coupled Systems Laboratory (CNAM), Paris, France, 15 January 2016.
19. *Uncertainty quantification of dynamics of composite plates and shells*, Politecnico di Torino, Turin, Italy, 25 June, 2015.
20. *Vibration energy harvesting in uncertain environments*, City University, London, UK, 24 February, 2015.

21. *Research directions in computational mechanics*, Instituto Tecnologico de Aeronautica (ITA), Sao Jose dos Campos, Brazil, 21 November 2014.
22. *Dynamics of structures with uncertainties*, The University of Campinas, Campinas, Brazil, 20 November 2014.
23. *Research directions in Engineering Dynamics*, The Federal University of Rio de Janeiro, Rio de Janeiro, Brazil, 10 November 2014.
24. *Spectral methods for fuzzy structural dynamics: modal vs direct approach*, Stuttgart, Germany, 11 June 2014.
25. *Dynamic finite element analysis of nonlocal bars*, National University of Defence Technology (NUDT), Changsha, China, 17 April 2014.
26. *Dynamics of nonlocal structures*, National University of Defence Technology (NUDT), Changsha, China, 16 April 2014.
27. *Mid-frequency structural dynamics using a stochastic multiscale method*, IUTAM Symposium on Multiscale modeling and uncertainty quantification of materials and structures, Santorini, Greece, 10 September 2013.
28. *A domain decomposition approach for hybrid stochastic problems in structural dynamic*, 25th Biennial Numerical Analysis Conference, Glasgow, Scotland, 27 June 2013.
29. *Stochastic methods in structural dynamics*, Embraer Aircraft Corporation, Sao Jose Dos Campos, Brazil, 23 April 2013.
30. *Uncertainty propagation is structural dynamics: Physics based methods*, California Institute of Technology, Pasadena, CA, USA, 14 April 2013.
31. *Research directions in computational mechanics across length-scales*, Federal University of Uberlândia, Uberlândia, Brazil, 15 February 2013.
32. *Uncertainty propagation in structural dynamics*, Airbus Workshop on Uncertainty Quantification & Management (UQ&M) in Aircraft Design, Bristol, 8 November 2012.
33. *Uncertainty quantification in structural dynamics*, Embraer Aircraft Corporation, Sao Jose Dos Campos, Brazil, 29 August 2012.
34. *A stochastic multiscale approach for mid-frequency vibration problem*, IUTAM Symposium on Multiscale Problems in Stochastic Mechanics, Karlsruhe, Germany, 26 June 2012.
35. *Perturbation-enhanced extended polynomial-chaos expansion for stochastic finite element problems*, Stochastic Mechanics 2012, Ustica, Italy, 9 June 2012.
36. *Atomistic mechanics of nanoscale structures: Static & dynamic analyses*, Indian Institute of Science Bangalore, Bangalore, India, 13 January 2012.
37. *Energy Harvesting Under Uncertainty*, Indian Institute of Technology Madras, Chennai, India, 11 January 2012.
38. *Stochastic structural dynamics using frequency adaptive basis functions*, Bengal Engineering and Science University, Howrah, India, 5 January 2012.
39. *Atomistic finite element method for nanoscale structures*, University of Limerick, Limerick, Ireland, 20 December 2011.
40. *Magnetopiezoelastic energy harvesting driven by stochastic jump processes*, University of Rome, Rome, Italy, 27 July 2011.

41. *A reduced orthogonal projection approach for stochastic finite element analysis: Elliptic and hyperbolic problems*, INI/WIMCS Joint Follow-Up Meeting on Computational Challenges in Partial Differential Equations, Swansea, UK, 7 April 2011.
42. *A reduced orthogonal projection approach for stochastic finite element analysis*, University of Liverpool, Liverpool, UK, 14 September 2010.
43. *Stochastic finite element analysis of uncertain structural systems*, University of Edinburgh, Edinburgh, UK, 16 June 2010.
44. *Elliptic stochastic partial differential equations: An orthonormal vector basis approach*, Uncertainty Quantification Workshop, Edinburgh, Scotland, 26 May, 2010.
45. *Piezoelectric energy harvesting under uncertainty* at the Bristol Energy Harvesting Workshop, University of Bristol, Bristol, UK, 17 December 2009.
46. *Probabilistic structural dynamics: Parametric vs. nonparametric approach*, WIMCS (Wales Institute of Mathematical and Computational Sciences) annual meeting, Swansea, UK, 14 December 2009.
47. *Uncertainty quantification in structural mechanics: analysis and identification*, University of Bradford, Bradford, UK, 8 December 2009.
48. *Extremely strong convergence of eigenvalue-density of linear stochastic dynamical systems*, IUTAM Symposium on the Vibration Analysis of Structures with Uncertainties St Petersburg, Russia, 9 July 2009.
49. *Uncertainty in structural dynamics: Analysis & identification*, University of Oxford, Oxford, UK, 27 April 2009.
50. *Uncertainty quantification in structural dynamics*, University of Johannesburg, Johannesburg, South Africa, 16 March 2009.
51. *Computational methods in structural mechanics & applications*, University of Pretoria, Pretoria, South Africa, 11 March 2009.
52. *Shaped modal sensors for uncertain dynamical systems*, Indian Institute of Science, Bangalore, India, 11 December 2008.
53. *Uncertainty quantification in structural dynamics using random matrix theory*, Southampton University, Southampton, UK, 18 November 2008.
54. *Uncertainty propagation in complex aero-mechanical systems: A random matrix approach*, University of Reading, Reading, UK, 16 October 2008.
55. *Uncertainty quantification for complex aero-mechanical systems* at the, Calculating the Effects of Uncertainty in Advanced Structures Workshop, London, UK, 15 May 2008.
56. *Uncertainty quantification in structural dynamics: A random matrix approach*, Los Alamos National Laboratory, Los Alamos, USA, 1 August 2006.
57. *Random matrix method for stochastic structural mechanics*, Carleton University, Ottawa, Canada, 23 June 2006.
58. *Probabilistic structural analysis using matrix variate distributions*, Cambridge University Engineering Department, 17 March 2006.
59. *Random eigenvalue problems revisited*, Indian Institute of Science, Bangalore, India, 21 July 2005.
60. *Identification of damping*, University of Catania, Catania, Italy, 23 June 2005.

6.7 Invited Advanced Lecture Courses

1. "Virtual Summer School - Central South University", Changsha, Hunan, China , 8 - 12 August 2021.
2. "Damping characterization in dynamic problems", FDP on Advanced FEA, IIT Jammu, India, 23 - 28 June 2021 (delivered online).
3. "Metamaterial and metasandwich for energy harvesting and vibration control - A Short Course (in six parts)", IIT Kanpur, India (online mode); 22 - 24 March 2021.
4. "Uncertainty quantification in Structural Dynamics - A Short Course", High-speed train research centre, Railway campus, Central South University, Changsha, Hunan, China, 30 -31 December 2019; 2-3 January 2020.
5. "Analysis of Mechanical Metamaterials - A Short Course", Politecnico di Torino, Italy, 13 -15 June 2018.
6. "Piezoelectric Vibration Energy Harvesting Under Uncertain Environment", Rice University, Houston, 3 - 5 April 2018.
7. "Analysis and Design of Piezoelectric Vibration Energy Harvesters", Indian Institute of Technology Madras, Chennai, India, 30 October 2017 - 3 November 2017.
8. "Nonlocal Dynamics of Nanoscale Structures (in two parts)", Universitlé Paris-Est Marne-la-Vallée, Paris, France, 18 January 2016.
9. "Nonlocal Mechanics of Structures", National University of Defence Technology, Changsha, China, 16-18 April 2014
10. "Stochastic Methods in Structural Dynamics", Embraer Aircraft, Sao Jose dos Campos, SP, Brazil, 22-26 April 2013.
11. "Dynamic Analysis of Wind and Marine Turbines", University of Bristol, 22 January 2009.
12. "Models, Verification, Validation, Identification and Stochastic Eigenvalue Problems" in Mechanical Vibration: Where Do We Stand? at the CISM International Center for Mechanical Sciences, Udine, Italy, 13-17 June 2005.

7 Contribution to the Profession

7.1 Editorial Roles

1. 08/2021-Present: Editorial Board member of Advanced Materials Science and Technology.
2. 11/2019-Present: Editorial Board member of ISSS Journal of Micro and Smart Systems.
3. 02/2019-Present: Editorial Board member of Reviews on Advanced Materials Science.
4. 06/2018-Present: Guest Editor, International Journal of Non-Linear Mechanics (NLM): Special Issue on "Non-Linear Dynamics of Micro- and Nano- Electro-Mechanical Systems"
5. 09/2018-Present: Editorial Board of the International Journal of Aeronautics and Aerospace Engineering (IJAE)
6. 09/2017-Present: Editorial Advisory Board member of Computers and Structures.
7. 09/2017-Present: Editorial Board member of Applied Sciences (Mechanical Engineering).
8. 11/2016-Present: Editorial Board member of Advances in Aircraft and Spacecraft Science.
9. 06/2015-Present: Editorial Board member of Probabilistic Engineering Mechanics.
10. 03/2014-Present: Editorial Board member of Journal of Nanotechnology in Diagnosis and Treat-

ment.

11. 01/2014-Present: Editorial Board member of Austin Journal of Nanomedicine & Nanotechnology.
12. 10/2013-Present: Editorial Board member of Nanoscience & Technology: Open Access.
13. 08/2012-Present: Editorial Board member of Nanomaterials & Molecular Nanotechnology.
14. 02/2012-Present: Editorial Board member of Journal of Aeronautics & Aerospace Engineering.
15. 11/2011-Present: Editorial Board member of the International Journal of Applied Engineering and Technology.
16. 07/2011-Present: Editorial Board member of CMES: Computer Modeling in Engineering & Sciences.
17. 06/2011-Present: Editorial Board member of CMC: Computers, Materials, & Continua.
18. 03/2011-Present: Editorial Board member of Machines: Machinery and Automation.
19. 06/2010-Present: Editorial Board member of Modelling and Simulation in Engineering.
20. 08/2009-Present: Editorial Board member of the International Journal of Mathematics in Engineering, Science and Aerospace (MESA).
21. 03/2009–Present: Editorial Advisory Board member of the Journal of Sound and Vibration.
22. 01/2009-Present: Editorial Board member of the International International Journal of Engineering Under Uncertainty: Hazards, Assessment and Mitigation.
23. 10/2008–Present: Editorial Advisory Board member of The Open Numerical Methods Journal.
24. 12/2007–Present: Editorial Advisory Board member of The Open Acoustics Journal.
25. 01/2006–10/2012: Associate Editor of Shock and Vibration.

7.2 Industrial Associations

04/2021–Present: Advisory Board of Datum Advanced Composites, Kanpur, India.

2019–Present: Collaboration with Probabilistic Design Laboratory of GE Global Research (Niskayuna, NY, USA) on uncertainty quantification methods for Digital Twins.

2012–Present: Technical consultant for Embraer Aircraft Corporation (Brazil) on reduced order methods for uncertainty quantification and digital model validation of complex systems.

2005–2009: Technical consultant for DNV GL (Bristol, UK) on uncertainty quantification in wind energy generation.

7.3 Association With Professional Bodies

1. 04/2017–Present: **Fellow of the Royal Aeronautical Society**.
2. 04/2016–Present: Member of The International Society for Optics and Photonics (SPIE).
3. 11/2012–Present: **Associate Fellow of American Institute of Aeronautics and Astronautics (AIAA)**.
4. 10/2012–Present: Member of Special Interest Group (SIG) on Uncertainty Quantification and Management in High Value Manufacturing (funded by InnovateUK).
5. 07/2012–Present: Member of GAMM Activity Group on Uncertainty Quantification (AG UQ).
6. 01/2010–Present: Member of American Society of Mechanical Engineers (ASME).
7. 09/2007–Present: Member of ASCE Probabilistic Methods Committee.
8. 04/2007-10/2012: Senior Member of American Institute of Aeronautics and Astronautics (AIAA).

9. 10/2005–Present: Member of EPSRC peer review college.
10. 08/2005–Present: Associate Member of The Institute of Nanotechnology (IoN).
11. 02/2005–Present: Member of Uncertainty Quantification and Model Validation (UQMV) technical division of SEM.
12. 07/2004–Present: Member of AIAA Non-Deterministic Approaches Technical Committee (NDA-TC).
13. 04/2004–03/2007: Member of American Institute of Aeronautics and Astronautics (AIAA).
14. 02/1999–Present: Member of Society for Experimental Mechanics (SEM).
15. 11/1998–10/2002: Fellow of Cambridge Philosophical Society.

7.4 Organization of Conferences/Workshops

1. RAEng DVF Workshop on Aero-Structure Dynamics, Swansea, UK, February 2019.
2. Fourth Embraer Workshop on Aeroelastic Tailoring, Swansea, UK, July 2018.
3. *Euromech Colloquium 603 Dynamics of Micro and Nano Electromechanical Systems: Multi-Field Modelling and Analysis*, Porto, Portugal, September 2018.
4. *6th International ASRANet Conference*, London, Croydon, UK, July 2012.
5. *Bristol Meeting on Uncertainty in Structural Dynamics (BmUSD 06)*, Bristol, April 2006.

7.5 Organization of Special Sessions in Conferences

1. *Mechanical and Acoustic Metamaterials*, 14th World Congress on Computational Mechanics (WCCM XIV), Paris, France, July 2020 (with Maria Cinefra, Politecnico di Torino; Chiara Daraio, California Institute of Technology).
2. *Uncertainty Quantification and Propagation in Heterogeneous Materials*, 14th World Congress on Computational Mechanics (WCCM XIV), Paris, France, July 2020 (with A. Sofi, University 'Mediterranea' of Reggio Calabria; G. Falsone, University of Messina).
3. *Static and Dynamic Analysis of Beam-like Structures*, 14th World Congress on Computational Mechanics (WCCM XIV), Paris, France, July 2020 (with Alessandro Palmeri, Loughborough University).
4. *Stochastic inverse problems in linear and nonlinear dynamics*, Fourth International Symposium on Uncertainty Quantification and Stochastic Modeling (UNCERTAINTIES 2018), Florianopolis, Brazil, April 2018 (with Dr A Batou, University of Liverpool; Thiago G Ritto, Universidade Federal do Rio de Janeiro (UFRJ)).
5. *Vibration Energy Harvesting*, 6th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2017), Rodos , Greece, June 2017 (with Dr A Batou, University of Liverpool).
6. *Stochastic Modeling and Uncertainty Quantification*, ASCE / Engineering Mechanics Institute (EMI) Conference, Rodos , Greece, June 2017 (with Rubens Sampaio (PUC-Rio) and Fernando Rochinha (COPPE)).
7. *Vibration Energy Harvesting*, 1st International Symposium on Energy Challenges and Mechanics, Aberdeen, Scotland, July 2014 (with Professor Grzegorz Litak, Lublin University of Technology, Poland).
8. *Nanomaterial Development for Biomedical Applications*, ASME First Global Congress on Nano-Engineering for Medicine and Biology (NEMB2010), Houston, TX, February 2010 (with Professor

Donggang Yao, Georgia Institute of technology, USA).

9. *Uncertainty Quantification and Propagation*, Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN), Crete, Greece, June 2007 (with Professor M. I. Friswell, University of Bristol).
10. *Experimental Approaches for Uncertainty Quantification in Structural Dynamics*, International Modal Analysis Conference (IMAC XXV), Orlando, Florida USA, January 2007 (with Professor M. I. Friswell, University of Bristol).
11. *Dynamics of Viscoelastically Damped Structures*, The Eighth International Conference on Computational Structures Technology, Las Palmas de Gran Canaria, Spain, September 2006 (with Professor G. Muscolino, DIC, University of Messina, Italy).

7.6 Session Chairs in Conferences

1. *The 8th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2021)*, Athens, Greece, June 2021 (online).
2. *The 8th International Conference on Uncertainty in Structural Dynamics (USD2020)*, Leuven, Belgium, September 2020 (online).
3. *2nd International Conference on Advances in Aerospace Structures, Systems & Technology (AASST 2019)*, London, UK, May 2019.
4. *Euromech Colloquium 603 Dynamics of Micro and Nano Electromechanical Systems: Multi-Field Modelling and Analysis*, Porto, Portugal, September 2018.
5. *The 14th International Conference on Vibration Engineering and Technology of Machinery (VETOMAC XIV)*, Lisbon, Portugal, September 2018.
6. *International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2017)*, Rodos, Greece, June 2017.
7. *Sixth International Congress on Computational Mechanics and Simulation (ICCMS2016)*, Mumbai, India, June 2016.
8. *SPIE Smart Structures/NDE Conference*, Las Vegas, NV, USA, March 2016.
9. *Thirteenth International Probabilistic Workshop 2015 (IPW 2015)*, Liverpool, UK, November 2015.
10. *First International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2015)*, Island of Crete, Greece, May 2015.
11. *AIAA Science and Technology Forum and Exposition 2015 (SciTech2015): 17th AIAA Non-Deterministic Approaches Conference*, Kissimmee, FL, USA, January 2015.
12. *The Twelfth International Conference on Computational Structures Technology (CST2014)*, Naples, Italy, September 2014.
13. *UTAM Symposium on Dynamical Analysis of Multibody Systems with Design Uncertainties*, Stuttgart, Germany, June 2014.
14. *Seventh International Conference on Computational Stochastic Mechanics (CSM7)* Santorini, Greece, June 2014.
15. *IUTAM Symposium on Multiscale modeling and uncertainty quantification of materials and structures*, Santorini, Greece, September 2013.
16. *Fourth International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2013)*, Kos Island, Greece, June 2013.

17. *54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Boston, MA, USA, April 2013.
18. *International Symposium on Dynamic Problems of Mechanics (DINAME 2013)*, Buzios, Brazil, February 2013.
19. *6th International ASRANet Conference*, London, Croydon, UK July 2012.
20. *2012 Stochastic Mechanics: An international conference*, Ustica, Italy, June 2012.
21. *First International Symposium on Uncertainty Quantification and Stochastic Modeling (Uncertainties 2012)*, Maresias, Sao Sebastiao, Sao Paulo, Brazil, February, 2012.
22. *International Symposium on Engineering under uncertainty: Safety assessment and Management (ISEUSAM- 2012)*, Shibpur, Howrah, India, January 2012.
23. *52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Denver, Colorado, USA, April 2011.
24. *Fourth European Congress on Computational Mechanics (ECCM 2010)*, Paris, France, May 2010.
25. *ASME First Global Congress on NanoEngineering for Medicine and Biology (NEMB2010)*, Houston, TX, February 2010.
26. *50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Palm Springs, CA, USA, May 2009.
27. *Mathematical Problems in Engineering, Aerospace and Sciences*, Genoa, Italy, 2008, April 2008.
28. *49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Schaumburg, IL, USA, April 2008.
29. *48th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Waikiki, Hawaii, USA, April 2007.
30. *25th International Modal Analysis Conference (IMAC-XXV)*, Orlando, Florida, USA, February 2007.
31. *Eighth International Conference on Computational Structures Technology*, Las Palmas de Gran Canaria, Spain, September 2006.
32. *Symposium on Structural Dynamics, Random Vibrations and Earthquake Engineering*, Indian Institute of Science, Bangalore, July 2005.

7.7 Services in Scientific and Technical Committees

1. Member of the Scientific Committee of: The 10th International Conference on Wave Mechanics and Vibrations (10th WMVC), Lisbon, Portugal, July 2022.
2. Member of the International Scientific Committee of: The 8th International Congress of the Serbian Society of Mechanics, Kragujevac, Serbia, June 2021.
3. Member of the Scientific Committee of: Roger Owen UKACM best PhD thesis prize, January 2021.
4. Member of the Advisory Committee of: Advances in Structural Mechanics and Applications (ASMA-2021), National Institute of Technology (NIT), Silchar, India, March 2021.
5. Member of the Advisory Committee of: International Conference on Advances in Energy Harvesting Technology (ICAEHT 2021), Virtual Conference, March 2021.
6. Member of the Scientific Committee of: The Global Summit and Expo on Aerospace and Mechanical Engineering (GSEAME2021), Valencia, Spain, October 2021.

7. Member of the Scientific Committee of: 4th International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2021), Athens, Greece, June 2021.
8. Member of the Scientific Committee of: 8th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 22021), Athens, Greece, June 2021.
9. Member of the Technical Panel: Vertical: V8 - Aerospace Technologies, Vaibhav Summit, India, October 2020.
10. Member of the Scientific Committee of: The 8th International Conference on Uncertainty in Structural Dynamics (USD2020), Leuven, Belgium, September 2020.
11. Member of the Scientific Committee of: XI International Conference on Structural Dynamics (EURODYN 2020), Athens, Greece, June 2020.
12. Member of the International Scientific Committee of: The 9th International Workshop on Reliable Engineering Computing (REC2020), Taormina, Italy, May 2020.
13. Member of the International Scientific Committee of: Probabilistic Mechanics & Reliability Conference 2020 (PMC 2020), New York , USA, May 2020.
14. Member of the Selection Committee in Aeronautics Engineering: Polytechnic University of Catalonia (UPC), Catalonia, Spain, January 2019.
15. Member of the Scientific Committee of: 3rd International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2019), Island of Crete, Greece, June 2019.
16. Member of the Scientific Committee of: 7th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2019), Island of Crete, Greece, June 2019.
17. Member of the Editorial Board of: The Thirteenth International Conference on Computational Structures Technology, Barcelona, Spain, September 2018.
18. Member of the Organizing Committee of: 30th Nanotechnology & Nanomaterials Annual Congress, Stockholm, Sweden, September 2018.
19. Member of the organising chairpersons of: Euromech colloquium 603: Dynamics of micro and nano electromechanical systems: multi-field modelling and analysis, Porto, Portugal, September 2018.
20. Member of the Scientific Committee of: 20th International Conference on Emerging Materials and Nanotechnology, Vancouver, Canada, June 2018.
21. Member of the Scientific Committee of: The 7th International Conference on Uncertainty in Structural Dynamics (USD2018), Leuven, Belgium, September 2018.
22. Member of the International Scientific Committee of: 14th International Conference on Vibration Engineering and Technology of Machinery (VETOMAC XIV), Lisbon, Portugal, September 2018.
23. Member of the Technical Advisory Panel of: The 1st International Conference on Advances in Aerospace Structures, Systems & Technology (AASST 2018), London, UK, May 2018.
24. Member of the International Scientific Committee of: UNCERTAINTIES 2018, Florianopolis, SC, Brazil, April 2018.
25. Member of the Scientific Committee of: 2nd International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2017), Rhodes Island, Greece, June 2017.

26. Member of the Scientific Committee of: 6th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2017), Rhodes Island, Greece, June 2017.
27. Member of the Scientific Advisory Committee of: CCMS2016: Sixth International Congress on Computational Mechanics and Simulation, IIT Mumbai, India, June 2016.
28. Member of the Advisory Committee of: 3rd International Conference on Innovations in Automation and Mechatronics Engineering - ICIAME2016, G H Patel College of Engineering & Technology, Gujarat, India, February 2016.
29. Member of the International Scientific Committee of: Fifth Serbian Congress on Theoretical and Applied Mechanics and Engineering (SSM 2015), Belgrade, Serbia, June, 2015.
30. British representative in the UK-USA Space and aviation workshop, Hampton, VA , USA, March 2015.
31. Member of the Local Scientific Committee of: 23rd Conference on Computational Mechanics (ACME 2015), Swansea, UK, April 2015.
32. Member of the Scientific Committee of: International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2015), Island of Crete, Greece, June 2015.
33. Member of the Scientific Committee of: 5th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2015), Island of Crete, Greece, June 2015.
34. Member of the Editorial Board of: The Twelfth International Conference on Computational Structures Technology (CST2014), Naples, Italy, September 2014.
35. Member of the Scientific Committee of: First International Symposium on Energy Challenges and Mechanics, Aberdeen, UK, July, 2014.
36. Member of the Scientific Committee of: Tenth International Conference on Vibration Engineering & Technology of Machinery (VETOMAC X), Manchester, UK, September 2014.
37. Member of the International Scientific Committee of: Sixth International Symposium on Uncertainty Modelling and Analysis, Liverpool, UK, June 2014.
38. External expert committee: The University of Cyprus, Cyprus, 2012-2013.
39. Member of the editorial advisory board of the book on: Mathematics of Uncertainty Modelling in the Analysis of Engineering and Science Problems, IGI Global, USA, 2013.
40. Member of the Scientific Committee of: 1st International Conference on Nonlocal Mechanics of Composites (NONMECH 2013, Istanbul, Turkey, October 2013.
41. Member of the Scientific Committee of: 4th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2013), Kos Island, Greece, June 2013.
42. Member of the Organising Committee of: International Conference and Exhibition on Mechanical & Aerospace Engineering, San Antonio, Texas, USA, October 2013.
43. Member of the Editorial Board of: The Eleventh International Conference on Computational Structures Technology (CST2012), Dubrovnik, Croatia, September 2012.
44. Member of the Scientific Committee of: USD2012 International Conference on Uncertainty in Structural Dynamics, Leuven, Belgium, September 2012.

45. Member of the Organizing Committee of: 6th International ASRANet Conference, London, Croydon, UK, July 2012.
46. Member of the Scientific Committee of: Stochastic Mechanics: An international conference, Ustica, Italy, June 2012.
47. Member of the Organizing Committee of: Engineering under uncertainty: Safety assessment and Management, Bengal Engineering and Science University, Shibpur, Howrah, India, January 2012.
48. Member of the Scientific Committee of: USD2010 International Conference on Uncertainty in Structural Dynamics, Leuven, Belgium, 2010.
49. Member of the Editorial Board of: The Tenth International Conference on Computational Structures Technology (CST2010), Valencia, Spain, September, 2010.
50. Member of the International Organizing Committee (IOC):ICNPAA 2010 world congress- 8th International Conference on "Mathematical Problems in Engineering, Aerospace and Sciences, INPE (National Institute for Space Research), Sao Jose dos Campos (SP), Brazil 2010.
51. External expert committee: The University of Cyprus, Cyprus, 2008-2009.
52. Member of the Scientific Committee: Second International Conference on Uncertainty in Structural Dynamics, University of Sheffield, Sheffield, UK, 2008-2009.
53. Member of the International Organizing Committee (IOC): Mathematical Problems in Engineering, Aerospace and Sciences, University of Genoa, Genoa, Italy, 2007-2008.
54. Member of the Editorial Board of: The Ninth International Conference on Computational Structures Technology (CST2008), Athens, Greece, September 2008.
55. Member of the Scientific Committee: 1st International Conference on Uncertainty in Structural Dynamics, University of Sheffield, Sheffield, UK, 2006-2007.
56. Member of the International Advisory Committee: Civil Engineering in the New Millennium: Opportunities and Challenges, Bengal Engineering and Science University, 2005-2007.
57. Member of the Editorial Board of: The Eighth International Conference on Computational Structures Technology, Las Palmas de Gran Canaria, Spain, 2005-2006.
58. Member of the Program Committee of: International Conference on Nonlinear Problems in Aviation and Aerospace, Budapest, Hungary, 2005-2006.
59. Member of the Scientific Committee: The Fifth Structural Engineering Convention, Indian Institute of Science, Bangalore, 2004-2005.

7.8 Reviewing of Research Grants

1. Qatar National Research Fund (QNRF).
2. Slovenian Research Agency (ARRS).
3. UK India Education & Research Initiative (UKIERI) Peer Review panel member, The British Council.
4. The Global Challenges Research Fund (GCRF) International Collaboration Awards reviewer, The Royal Society, UK.
5. Newton International Fellowship panel member, The Royal Society, UK.
6. Scientific Research-FNRS (F.R.S.-FNRS), Belgium.
7. Science Foundation Ireland, Ireland.
8. Nuffield foundation.

9. Engineering and Physical Sciences Research Council (EPSRC).
10. Research Foundation Flanders (FWO), Belgium.
11. National Research foundation (NRF), South Africa.
12. Office of Science, U.S. Department of Energy, USA.
13. The Leverhulme Trust, UK.
14. Faculty Research Grant Competition, American University of Sharjah, UAE.
15. Czech Science Foundation GACR, Czech Republic.
16. Romanian National Council for Research and Development, Romania.
17. Estonian Research Council, Estonia.
18. The Research Council of Norway, Norway.
19. Superior Council of the National Fund for Scientific & Technological Development (FONDECYT) of Chile, Chile.
20. Defence Research and Development, Canada.
21. The Netherlands Organisation for Scientific Research (NWO), Netherlands.
22. Flemish agency for Innovation by Science and Technology (IWT), Belgium.
23. The Royal Society, UK.

7.9 Reviewing of Books

1. Book reviewer for John Wiley & Sons.
2. Book reviewer for the Institution of Mechanical Engineers.
3. Science and Technology book reviewer for Elsevier/Butterworth-Heinemann. Publishers
4. Book reviewer for The Royal Aeronautical Society.

7.10 Reviewing of Articles in Academic Journals

1. Nature Materials.
2. Nature Scientific Reports.
3. American Institute of Aeronautics and Astronautics Journal (AIAA Journal).
4. Proceedings of the Royal Society of London: Mathematical, Physical and Engineering Sciences.
5. International Journal of Acoustics and Vibration.
6. Transactions of American Society of Mechanical Engineering (ASME), Journal of Applied Mechanics.
7. American Society of Civil Engineering (ASCE) Journal of Engineering Mechanics.
8. Journal of Sound and Vibration.
9. Journal of Structural Engineering and Mechanics.
10. International Journal of Solids and Structures.
11. AIAA Journal of Aircraft.
12. ASME Journal of Vibration and Acoustics.
13. Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering.
14. IMA Journal of Applied Mathematics.
15. International Journal for Numerical Methods in Engineering.
16. Shock and Vibration.

17. Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering.
18. International Journal of Mechanical Sciences.
19. Experimental Mechanics.
20. Computer Methods in Applied Mechanics and Engineering.
21. Sādhanā - Proceedings of the Indian Academy of Engineering Sciences.
22. Communications in Numerical Methods in Engineering.
23. Plastics, Rubber and Composites: Macromolecular Engineering Journal.
24. ASCE Journal of Structural Engineering.
25. Proceedings of Institution of Civil Engineers (ICE), Structures and Buildings.
26. The Journal of Strain Analysis for Engineering Design.
27. Proceedings of the Institution of Mechanical Engineers, Part K: Journal of Multi-body Dynamics.
28. Transactions on Internet Research.
29. International Journal of Computer Mathematics.
30. Scientific Journals International (SJI).
31. Mechanical Systems and Signal Processing.
32. Water Resources Research.
33. ASCE Journal of Aerospace Engineering.
34. ASME Journal of Computational and Nonlinear Dynamics.
35. Applied Mathematical Modelling.
36. Engineering Computations.
37. Mechanics Research Communications.
38. Acoustics Australia.
39. International Journal of Systems Science.
40. Structural and Multidisciplinary Optimization.
41. Journal of Design Engineering.
42. ISET Journal of Earthquake Technology.
43. Algorithms.
44. The Open Acoustics Journal.
45. Advances in Mechanical Engineering.
46. Structural Control and Health Monitoring.
47. Mechanics of Advanced Materials and Structures.
48. Simulation Modelling Practice and Theory.
49. Bulletin of Earthquake Engineering.
50. Earthquake Engineering and Structural Dynamics.
51. Proceedings of ICE, Engineering and Computational Mechanics.
52. Probabilistic Engineering Mechanics.
53. Journal of Biological Physics.
54. South African Journal of Science.

55. Applied Mathematics and Computation.
56. Physica E: Low-dimensional Systems and Nanostructures.
57. Advances in Engineering Software.
58. International Journal of Reliability and Safety.
59. Computers & Mathematics with Applications.
60. Micromachines.
61. The Journal of the Acoustical Society of America.
62. Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science.
63. International Journal of Smart and Nano Materials.
64. Journal of Vibration and Control.
65. European Journal of Mechanics - A/Solids.
66. Computational Materials Science.
67. Journal of Wind Engineering & Industrial Aerodynamics.
68. Journal of Zhejiang University.
69. Entropy.
70. International Journal for Computational Methods in Engineering Science and Mechanics.
71. Nanoscale.
72. International Journal for Multiscale Computational Engineering.
73. Journal of the Brazilian Society of Mechanical Sciences and Engineering.
74. Journal of Intelligent Material Systems and Structures.
75. Engineering Structures.
76. Materials Chemistry and Physics.
77. Microscopy and Microanalysis.
78. Mathematics and Mechanics of Solids.
79. Journal of Computational Physics.
80. Nonlinear Dynamics.
81. Physical Chemistry Chemical Physics.
82. Composite Structures.
83. Journal of Physics: Condensed Matter.
84. Mechanics of Materials.
85. Advances in Acoustics and Vibration.
86. Royal Society of Chemistry (RSC) Advances.
87. Communications in Nonlinear Science and Numerical Simulation.
88. Journal of Nanomaterials & Molecular Nanotechnology (JNMN).
89. Current Nanoscience.
90. International Journal of Nanomanufacturing.
91. ASCE Journal of Nanomechanics and Micromechanics.
92. Journal of Applied Physics.

93. European Physical Journal.
94. Journal of Fluids and Structures.
95. Nanoscience and Nanotechnology Letters.
96. IET Nanobiotechnology.
97. Mechatronics.
98. Journal of Computational Methods in Sciences and Engineering.
99. ASME Journal of Computational and Nonlinear Dynamics.
100. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture.
101. Molecular Simulation.
102. Modern Physics Letters B.
103. Sensors & Actuators: A. Physical.
104. Smart Materials and Structures.
105. Meccanica.
106. International Journal of Mechanics and Materials in Design.
107. Annals of Solid and Structural Mechanics.
108. International Journal of Heat and Mass Transfer.
109. Small.
110. Polymer Composites.
111. Journal of Engineering Mathematics.
112. Wind Energy.
113. Scientia Iranica.
114. Journal of Materials Science.
115. Applied Physics Letters.
116. Mathematical Communications.
117. Ain Shams Engineering Journal.
118. Journal of Physics and Chemistry of Solids.
119. Philosophical Transactions of the Royal Society of London. Series A, Mathematical and Physical Sciences.
120. Journal of the Royal Society Interface.
121. Journal of Computing in Civil Engineering.
122. Microfluidics and Nanofluidics.
123. Applied Physics A.
124. Mathematics and Mechanics of Solids
125. Microelectronic Engineering
126. ChemPhysChem
127. Brazilian Journal of Physics
128. Plos One
129. Numerical Linear Algebra with Applications

130. Materials and Design

7.11 Reviewing of Articles for Conferences

1. Tenth International Conference on Vibration Engineering & Technology of Machinery (VETOMAC X), September 2014, Manchester, UK.
2. AIAA SciTech 2014 Conference, January 2014, Maryland, USA.
3. 54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, April 2013, Boston, Massachusetts, USA.
4. The 2013 American Control Conference, June 2013, Washington DC, USA.
5. 53nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, April 2012, Honolulu, Hawaii, USA.
6. 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, April 2011, Denver, Colorado, USA.
7. ASME First Global Congress on NanoEngineering for Medicine and Biology (NEMB2010), February 2010, Houston, TX, USA.
8. 51th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, April 2010, Orlando, Florida, USA.
9. Second International Conference on Uncertainty in Structural Dynamics, June 2009, University of Sheffield, Sheffield, UK.
10. IISc Centenary International Conference on Aerospace Engineering and Exhibition (ICEAE 2009), May 2009, Indian Institute of Science Bangalore, India.
11. 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, May 2009, Palm Springs, California, USA.
12. IUTAM Symposium on Multi-Functional Material Structures and Systems, December 2008, Indian Institute of Science Bangalore, India.
13. The ninth International Conference on Vibrations in Rotating Machinery, September 2008, Exeter, UK.
14. 12th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, September 2008, Victoria, British Columbia, Canada.
15. 49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, April 2008, Schaumburg, IL, USA.
16. 1st International Conference on Uncertainty in Structural Dynamics, June 2007, University of Sheffield, Sheffield, UK.
17. 48th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, April 2007, Waikiki, Hawaii, USA.
18. 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, May 2006, Newport, Rhode Island, USA.
19. The Eighth International Conference on Vibrations in Rotating Machinery, Swansea, UK, September 7-9 2004.
20. 7th Biennial ASME Conference Engineering Systems Design and Analysis (ESDA 2004), Manchester, UK, July 19-22, 2004

8 Contribution to the University

01/2021–09/2021: *Leader of the Aerospace Structures Group (a team of 5 academics) within ZCCE:* Zienkiewicz Centre for Computational Engineering (ZCCE) is a world-leading centre confusing on computational methods for engineering and applied sciences. Aerospace Structures Group is one if the five thematic groups within ZCCE. My role is to provide scientific leadership, vision and guide early career researchers (ECRs) in this area. I am also responsible for two laboratories, namely, the new wind turbine lab and the structural dynamics and smart structures lab.

10/2019–09/2021: *Theme leader of Digital Manufacturing (a team of 4 academics) division within FRMI:* Future Manufacturing Research Institute (FMRI) is a new research centre within the College of Engineering. It started in the summer of 2019 with the new purpose-built £35m Engineering North building. My role is to provide scientific leadership and vision in digital manufacturing and data-centric computational engineering area.

09/2014–09/2018: *Postgraduate admission tutor in aerospace and mechanical engineering:* I was the final decision maker for all PhD and M.Res student applications in aerospace and mechanical engineering. This is a position of key responsibility in the College of Engineering. I am being helped by two capable administrative assistants.

03/2012–10/2013: *Coordinator of the exchange program with Sun Yat-sen University, China:* This program is aimed at setting up a joint MSc program on Mechanics and nano-medicine with the School of Engineering of Sun-Yet Sun University, China. I lead the visit of a team of four academics from Swansea University to China and signed the Memorandum of Understanding (MOU).

07/2009–08/2012: *Portfolio Director of Aerospace Engineering:* I had the overall responsibility for the BEng and MEng programs in aerospace engineering. Duties include chairing the exam board meetings, leading accreditation activities and other administration works related to the smooth running of the program. My duties also include communicating with the external examiners, reviewing of questions papers for all years, liaising with national professional bodies, representing the teaching portfolio at the University meetings, forwarding the teaching/laboratory resources needs of the portfolio to the departmental teaching and learning committee. Other contributions involve modifying the curriculum, making decisions on new courses and changing existing courses based on the external examiner's comments, dealing with appeals and verification of examination marks and conducting parent tours on open days. Further duties include keeping the teaching website up-to-date and the annual production of the student handbook in a timely and accurate manner. I led the internal activities which secured the accreditation of the BEng and MEng in aerospace engineering program for the next five years (from 2012) by professional bodies such as the Royal Aeronautical Society (RAeS) and the Institution of Mechanical Engineers (IMechE).

07/2008–08/2011: *Third-year coordinator:* I had the responsibility for the third year of the aerospace engineering program. Duties include helping with the selection of courses, specific streams, career advising and the year-in-industry programs.

06/2004–03/2006: *Member of the BLADE MSc (MSc in Advanced Dynamic Engineering) Steering Group:* I was involved in the design of the new MSc course which started from the academic year 2005-06. This was conducted from the Bristol Laboratory for Advanced Dynamic Engineering (BLADE).

09/2003–11/2004: *Fourth-year tutor:* I was the final year tutor for the undergraduate program in the Department of Aerospace Engineering, University of Bristol. I had the overall responsibility for the

teaching and general running of the Fourth-year undergraduate course. Duties include setting the timetable, arranging year forum, gathering feedback from the student representatives, updating the teaching web-site, handling student-complaints, processing of the examination and coursework marks, coordinating and guiding the students to select optional courses, organizing assistance with the research project (if necessary), handling confidential student-data and assisting students from abroad.

07/2003–08/2004: *Member of PIET*: PIET (Promotion and Internal Engagement Team) is the central group to envisage, direct and supervise interdisciplinary research works within the newly developed £15M facility BLADE (Bristol Laboratory for Advanced Dynamic Engineering).

03/2003–03/2007: *Member of Computing Coordination Group*, Department of Aerospace Engineering, University of Bristol. Responsible for setting out departmental computing vision and policies for computing resource management.

10/2001-12/2002: *Member of the Governing Body of Fitzwilliam College, Cambridge*. Duties include taking part in the general administration of the college through governing body meetings and other meetings.

List of Research Publications[¶]

Books

Figure 3: **Books authored by Professor Adhikari.**

[1] Dey, S., Mukhopadhyay, T., and Adhikari, S., *Uncertainty Quantification in Laminated Composites: A Meta-model Based Approach*, Taylor & Francis Inc (CRC Press), Boca Raton, FL, USA, 2018, (374 pages).
★ This book has been acquired by more than 82 academic libraries across the world.
● Amazon link: https://amzn.to/3eklELC.

[2] Marwala, T., Boulkaibet, I., and Adhikari, S., *Probabilistic Finite Element Model Updating Using Bayesian Statistics: Applications to Aeronautical and Mechanical Engineering*, Wiley-Blackwell,

[¶]All publications are listed in the reverse chronological order.

UK, 2016, (248 pages).
★ This book has been acquired by more than 552 academic libraries across the world.
• Amazon link: http://amzn.to/1qWQfnD.

[3] Karlicic, D., Murmu, T., Adhikari, S., and McCarthy, M., *Non-local Structural Mechanics*, Wiley ISTE, UK, 2015, in press (360 pages).
★ This book has been acquired by more than 558 academic libraries across the world.
• Amazon link: https://amzn.to/3vaVr96.

[4] Adhikari, S., *Structural Dynamic Analysis with Generalized Damping Models: Identification*, Wiley ISTE, UK, 2013, (272 pages).
★ This book has been acquired by more than 629 academic libraries across the world.
• Amazon link: http://amzn.to/1dvVrkF.

[5] Adhikari, S., *Structural Dynamic Analysis with Generalized Damping Models: Analysis*, Wiley ISTE, UK, 2013, (368 pages).
★ This book has been acquired by more than 630 academic libraries across the world.
• Amazon link: http://amzn.to/19dH0Wv.

Edited Books

[1] Adhikari, S., Dutta, A., and Choudhury, S., "Advances in Structural Technologies," *Select Proceedings of CoAST 2019*, edited by S. Adhikari, A. Dutta, and S. Choudhury, Springer Nature, Singapore, 2020.
★ This book has been acquired by more than 103 academic libraries across the world.
• Amazon link: https://amzn.to/2QT7gSh.

[2] Adhikari, S., Bhattacharjee, J., and Bhattacharjee, B., "Advances in Structural Engineering and Rehabilitation," *Select Proceedings of TRACE 2018*, edited by S. Adhikari, J. Bhattacharjee, and B. Bhattacharjee, Springer Nature, Singapore, 2019.
★ This book has been acquired by more than 157 academic libraries across the world.
• Amazon link: https://amzn.to/3ncpGtD.

[3] Adhikari, S. and Bhattacharya, S., "Mathematical Methods," *Encyclopedia of Earthquake Engineering*, edited by M. Beer, I. Kougioumtzoglou, E. Patelli, and S.-K. Au, Springer, UK, 2015.
• Amazon link: https://amzn.to/3neRI7x.

Book Chapters

[1] Chatterjee, T., Karlicic, D., Adhikari, S., and Friswell, M. I., *Data Science in Engineering, Volume 9,*, chap. Parametric amplification in a stochastic nonlinear piezoelectric energy harvester via machine learning, Springer, USA, 2022.

[2] Larsen, D., Arora, V., and Adhikari, S., *Developments in the Analysis and Design of Marine Structures*, chap. Fatigue life estimation of welded joint in a jacket leg using stochastic finite element analysis, CRC Press, London, 2021.

[3] Mukhopadhyay, T., Mahata, A., and Adhikari, S., *Synthesis, Modelling and Characterization of 2D Materials and their Heterostructures (Micro & Nano Technologies*, chap. Lattice and continuum-based modeling of 2D materials, Elsevier, Netherlands, 2020.

[4] Metya, S., Mukhopadhyay, T., Adhikari, S., and Bhattacharya, G., *Neural Computation in Engi-*

neering and Science,, chap. Efficient System Reliability Analysis of Earth Slopes based on Support Vector Machine Regression Model, Elsevier, Netherlands, 2017.

[5] Pascual, B. and Adhikari, S., *Computational Stochastic Mechanics (CSM 7)*, chap. Dynamic Response Statistics of Damped Stochastic Oscillatory Systems, Research Publishing Services, Singapore, 2017.

[6] Adhikari, S., *Boron Nitride Nanotubes in Nanomedicine*, chap. Boron Nitride Nanotubes as Bionanosensors, Elsevier, Netherlands, 2015, in press.

[7] Adhikari, S., *Encyclopedia of Earthquake Engineering*, chap. Structures with Non-viscous Damping: Modeling and Analysis, Springer-Verlag, Germany, 2015, in press.

[8] Friswell, M. I. and Adhikari, S., *Advances in Energy Harvesting Methods*, chap. Random excitation of bistable harvesters, Springer, UK, 2013.

[9] Kundu, A. and Adhikari, S., *Proceedings of the International Symposium on Engineering under Uncertainty: Safety Assessment and Management (ISEUSAM - 2012)*, chap. Stochastic structural dynamics using frequency adaptive basis functions, Springer, UK, 2013.

[10] Kundu, A. and Adhikari, S., *Computational Methods in Stochastic Dynamics: Volume 2*, chap. A novel reduced spectral function approach for finite element analysis of stochastic dynamical systems, Springer, UK, 2012.

[11] Adhikari, S. and Pastur, L., *IUTAM Symposium on the Vibration Analysis of Structures with Uncertainties*, chap. Extremely strong convergence of eigenvalue-density of linear stochastic dynamical systems, Springer, UK, 2010.

[12] Adhikari, S., *Proceedings of the Tenth International Conference on Computational Structures Technology*, chap. A Vector-Space Approach for Stochastic Finite Element Analysis, Civil-Comp Press, Stirlingshire, UK, 2010.

[13] Pascual, B. and Adhikari, S., *Proceedings of the Tenth International Conference on Computational Structures Technology*, chap. Frequency response of stochastic dynamic systems: A modal approach, Civil-Comp Press, Stirlingshire, UK, 2010.

[14] Adhikari, S. and Friswell, M. I., *IUTAM Symposium on Multi-Functional Material Structures and Systems*, chap. Shaped modal sensors for uncertain dynamical systems, Springer, UK, 2010.

[15] DiazDelaO, F. A. and Adhikari, S., *Safety, Reliability and Risk of Structures, Infrastructures and Engineering*, chap. Gaussian process emulators for dynamical systems with random parameters,, CRC Press, Boca Raton, FL, USA, 2009.

[16] DiazDelaO, F. A. and Adhikari, S., *Proceedings of the Sixth International Conference on Engineering Computational Technology*, chap. Bayesian emulators and the stochastic finite element method, Civil-Comp Press, Stirlingshire, UK, 2008.

[17] Adhikari, S., *Mechanical Vibration: Where Do We Stand?*, chap. Models, Verification, Validation, Identification and Stochastic Eigenvalue Problems, Springer Wien, New York, 2006, p. 60 pages.

[18] Adhikari, S., *Wiley Encyclopedia of Statistics in Quality and Reliability*, Vol. (in three volumes) of *Computationally Intensive Methods*, chap. Asymptotic methods for reliability analysis of very large systems, John Wiley & Sons, Ltd., London, 2007, p. 12 pages.

[19] Bhattacharya, S. and Adhikari, S., *Foundation design in seismic areas: Principles and few appli-*

cations, chap. Damping and Resonance of piled foundations in liquefied soil during strong earthquakes, National Information Centre for Earthquake Engineering (NICEE), India, 2007.

[20] Bhattacharya, S. and Adhikari, S., *Design of Foundations in Seismic Areas: Principles and Applications*, chap. Dynamic behaviour of piled foundations in liquefied soil during strong earthquakes, National Information Centre for Earthquake Engineering (NICEE), India, 2007.

[21] Khalil, M., Adhikari, S., and Sarkar, A., *Proceedings of the Eighth International Conference on Computational Structures Technology*, chap. Identification of damping using proper orthogonal decomposition, Civil-Comp Press, Stirlingshire, UK, 2006.

[22] Wagg, D. J. and Adhikari, S., *Proceedings of the Eighth International Conference on Computational Structures Technology*, chap. On the dynamics of a Duffing oscillator with an exponential non-viscous damping model, Civil-Comp Press, Stirlingshire, UK, 2006.

Refereed Journal Papers

A. Uncertainty quantification in computational mechanics

A.1. Dynamics of stochastic systems

[1] Pryse, S. E., Kundu, A., and Adhikari, S., "Optimal reduced order modelling of transient stochastic structural dynamic systems using Arnoldi-Lyapunov basis," *ASCE Journal of Engineering Mechanics*, 2022, in press.

[2] Liu, X., Liu, X., Adhikari, S., and Yin, S., "Extended Wittrick-Williams algorithm for eigenvalue problems of stochastic dynamic stiffness method," *Mechanical Systems and Signal Processing*, Vol. 166, No. 3, 2022, pp. 108354.

[3] Kasinos, S., Palmeri, A., Lombardo, M., and Adhikari, S., "A reduced modal subspace approach for damped stochastic dynamic systems," *Computers and Structures*, Vol. 257, No. 12, 2021, pp. 106651.
★ This article ranked 16th among the top 25 most downloaded articles, December 2021.

[4] Liu, X., Zhao, X., Adhikari, S., and Liu, X., "Stochastic dynamic stiffness for damped taught membranes," *Computers and Structures*, Vol. 248, No. 5, 2021, pp. 106483.

[5] Chatterjee, T., Adhikari, S., and Friswell, M. I., "Multi-level decomposition framework for reliability assessment of assembled stochastic linear structural systems," *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, Vol. 7, No. 1, 2021, pp. 04021003.

[6] Chatterjee, T., Karlicic, D., Adhikari, S., and Friswell, M. I., "Gaussian process assisted stochastic dynamic analysis of near-periodic structures," *Mechanical Systems and Signal Processing*, Vol. 149, No. 2, 2021, pp. 107218.

[7] Chatterjee, T., Adhikari, S., and Friswell, M. I., "Uncertainty propagation in dynamic sub-structuring by model reduction integrated domain decomposition," *Computer Methods in Applied Mechanics and Engineering*, Vol. 366, No. 7, 2020, pp. 113060.

[8] Jacquelin, E., Brizard, D., Adhikari, S., and Friswel, M. I., "Time-domain response of

damped stochastic multiple-degree-of-freedom systems," *ASCE Journal of Engineering Mechanics*, Vol. 227, No. 7, 2020, pp. 1635–1646.

[9] Dey, S., Mukhopadhyay, T., Naskar, S., Dey, T. K., Chalak, H. D., and Adhikari, S., "Probabilistic characterization for dynamics and stability of laminated soft core sandwich plates," *Journal of Sandwich Structures and Materials*, Vol. 21, No. 1, 2019, pp. 366–397.

[10] Pryse, S. E., Kundu, A., and Adhikari, S., "Projection methods for stochastic dynamic systems: A frequency domain approach," *Computer Methods in Applied Mechanics and Engineering*, Vol. 338, No. 8, 2018, pp. 412–439.

[11] Pryse, S. E., Adhikari, S., and Kundu, A., "Sample-based and sample-aggregated Galerkin projection schemes for structural dynamics," *Probabilistic Engineering Mechanics*, Vol. 54, No. 10, 2018, pp. 118–130.

[12] Dey, S., Mukhopadhyay, T., Sahu, S. K., and Adhikari, S., "Stochastic dynamic stability analysis of composite curved panels subjected to non-uniform partial edge loading," *European Journal of Mechanics - A/Solids*, Vol. 67, No. 1-2, 2018, pp. 108–122.

[13] Jacquelin, E., Dessombz, O., Sinou, J.-J., Adhikari, S., and Friswel, M. I., "Polynomial chaos based eXtended Pade expansion in structural dynamics," *International Journal for Numerical Methods in Engineering*, Vol. 111, No. 12, 2017, pp. 1170–1191.

[14] Dey, S., Mukhopadhyay, T., Adhikari, S., Spickenheuer, A., and Gohs, U., "Uncertainty quantification in natural frequency of composite plates - An Artificial neural network based approach," *Advanced Composite Letter*, Vol. 25, No. 2, 2016, pp. 43–48.

[15] Mukhopadhyay, T., Chakraborty, S., Dey, S., Adhikari, S., and Chowdhury, R., "A critical assessment of Kriging model variants for high-fidelity uncertainty quantification in dynamics of composite shells," *Archives of Computational Methods in Engineering*, Vol. 24, No. 3, 2017, pp. 495–518.

[16] Jacquelin, E., Adhikari, S., Sinou, J.-J., and Friswell, M. I., "The role of roots of orthogonal polynomials in the dynamic response of stochastic systems," *ASCE Journal of Engineering Mechanics*, Vol. 142, No. 8, 2015, pp. 06016004:1–8.

[17] Dey, S., Mukhopadhyay, T., Sahu, S. K., and Adhikari, S., "Effect of cutout on stochastic natural frequency of composite curved panels," *Composites Part B*, Vol. 105, No. 11, 2016, pp. 188–202.

[18] Dey, S., Mukhopadhyay, T., Spickenheuer, A., Adhikari, S., and Heinrich, G., "Bottom up surrogate based approach for stochastic frequency response analysis of laminated composite plates," *Composite Structures*, Vol. 140, No. 4, 2016, pp. 712–727.

[19] Jacquelin, E., Friswel, M. I., Adhikari, S., Dessombz, O., and Sinou, J.-J., "Polynomial chaos expansion with random and fuzzy variables," *Mechanical Systems and Signal Processing*, Vol. 75, No. 6, 2016, pp. 41–56.

[20] Mukhopadhyay, T., Dey, S., and Adhikari, S., "On quantifying the effect of noise in surrogate based stochastic free vibration analysis of composite laminates," *Composite Structures*, Vol. 140, No. 4, 2016, pp. 798–805.

[21] Kundu, A., Adhikari, S., and Friswell, M. I., "Transient response analysis of randomly parametrized finite element systems based on approximate balanced reduction," *Computer Methods in Applied Mechanics and Engineering*, Vol. 285, No. 3, 2015, pp. 542–570.

[22] Dey, S., Mukhopadhyay, T., and Adhikari, S., "Stochastic free vibration analyses of composite doubly curved shells - A Kriging model approach," *Composites Part B: Engineering*, Vol. 70, No. 3, 2015, pp. 99–112.

[23] Adhikari, S. and Pascual, B., "The 'damping effect' in the dynamic response of stochastic oscillators," *Probabilistic Engineering Mechanics*, Vol. 44, No. 4, 2016, pp. 2–17.

[24] Jacquelin, E., Adhikari, S., Sinou, J.-J., and Friswell, M. I., "Polynomial chaos expansion and steady-state response of a class of random dynamical systems," *ASCE Journal of Engineering Mechanics*, Vol. 106, No. 6, 2015, pp. 061901:1–4.

[25] Kundu, A. and Adhikari, S., "Dynamic analysis of stochastic structural systems using frequency adaptive spectral functions," *Probabilistic Engineering Mechanics*, Vol. 39, No. 1, 2015, pp. 23–38.
★ Among the top 25 most downloaded articles in January 2015.

[26] Kundu, A. and Adhikari, S., "Transient response of structural dynamic systems with parametric uncertainty," *ASCE Journal of Engineering Mechanics*, Vol. 140, No. 2, 2014, pp. 315–331.

[27] DiazDelaO, F. A., Kundu, A., Adhikari, S., and Friswell, M. I., "Hybridization of spectral function approach with Bayesian emulators for stochastic structural dynamics," *Computer Methods in Applied Mechanics and Engineering*, Vol. 270, No. 3, 2014, pp. 201–209.

[28] DiazDelaO, F. A., Adhikari, S., Flores, E. I. S., and Friswell, M. I., "Stochastic structural dynamic analysis using Gaussian process emulators," *Computers and Structures*, Vol. 120, No. 1, 2013, pp. 24–32.

[29] Pascual, B. and Adhikari, S., "Combined parametric-nonparametric uncertainty quantification using random matrix theory and polynomial chaos expansion," *Computers and Structures*, Vol. 112-113, No. 12, 2012, pp. 84–94.

[30] Adhikari, S., "Doubly spectral stochastic finite element method (DSSFEM) for structural dynamics," *ASCE Journal of Aerospace Engineering*, Vol. 24, No. 3, 2011, pp. 264–276.

[31] Adhikari, S. and Friswell, M. I., "Shaped modal sensors for linear stochastic beams," *Journal of Intelligent Material Systems and Structures*, Vol. 20, No. 18, December 2009, pp. 2269–2284.

[32] Adhikari, S. and Manohar, C. S., "Transient dynamics of stochastically parametered beams," *ASCE Journal of Engineering Mechanics*, Vol. 126, No. 11, November 2000, pp. 1131–1140.

[33] Adhikari, S. and Manohar, C. S., "Dynamic analysis of framed structures with statistical uncertainties," *International Journal for Numerical Methods in Engineering*, Vol. 44, No. 8, 1999, pp. 1157–1178.

[34] Manohar, C. S. and Adhikari, S., "Dynamic stiffness of randomly parametered beams," *Probabilistic Engineering Mechanics*, Vol. 13, No. 1, January 1998, pp. 39–51.

[35] Manohar, C. S. and Adhikari, S., "Statistical analysis of vibration energy flow in randomly parametered trusses," *Journal of Sound and Vibration*, Vol. 217, No. 1, 1998, pp. 43–74.

A.2. Random eigenvalue problem

[36] Adhikari, S. and Chakraborty, S., "Random matrix eigenvalue problems in structural dynamics: An iterative approach," *Mechanical Systems and Signal Processing*, Vol. 164, No. 2, 2022,

pp. 108260.

[37] Pryse, S. E. and Adhikari, S., "Stochastic finite element response analysis using random eigenfunction expansion," *Computers and Structures*, Vol. 192, No. 11, 2017, pp. 1–15.

[38] Naskar, S., Mukhopadhyay, T., Sriramula, S., and Adhikari, S., "Stochastic natural frequency analysis of damaged thin-walled laminated composite beams with uncertainty in micromechanical properties," *Composites Part B*, Vol. 160, No. 1, 2017, pp. 312–334.
★ Ranked 2nd among the top 25 most downloaded articles in January 2017.

[39] Dey, S., Naskar, S., Mukhopadhyay, T., Gohs, U., Spickenheuer, A., Bittrich, L., Sriramula, S., Adhikari, S., and Heinrich, G., "Uncertain natural frequency analysis of composite plates including effect of noise - A polynomial neural network approach," *Composite Structures*, Vol. 143, No. 5, 2016, pp. 130–142.

[40] Dey, S., Mukhopadhyay, T., Adhikari, S., and Khodaparast, H. H., "Stochastic natural frequency of composite conical shells," *Acta Mechanica*, Vol. 226, No. 8, 2015, pp. 2537–2553.

[41] Dey, S., Mukhopadhyay, T., and Adhikari, S., "Stochastic free vibration analysis of angle-ply composite plates - A RS-HDMR approach," *Composite Structures*, Vol. 122, No. 4, 2015, pp. 526–536.

[42] Pascual, B. and Adhikari, S., "Hybrid perturbation-polynomial chaos approaches to the random algebraic eigenvalue problem," *Computer Methods in Applied Mechanics and Engineering*, Vol. 217-220, No. 1, 2012, pp. 153–167.

[43] Adhikari, S., Pastur, L., Lytova, A., and Du-Bois, J. L., "Eigenvalue-density of linear stochastic dynamical systems: A random matrix approach," *Journal of Sound and Vibration*, Vol. 331, No. 5, 2012, pp. 1042–1058.

[44] Adhikari, S. and Phani, A. S., "Random eigenvalue problems in structural dynamics: Experimental investigations," *AIAA Journal*, Vol. 48, No. 6, 2010, pp. 1085–1097.

[45] Adhikari, S., "Joint statistics of natural frequencies of stochastic dynamic systems," *Computational Mechanics*, Vol. 40, No. 4, September 2007, pp. 739–752.

[46] Adhikari, S. and Friswell, M. I., "Random matrix eigenvalue problems in structural dynamics," *International Journal for Numerical Methods in Engineering*, Vol. 69, No. 3, 2007, pp. 562–591.

[47] Adhikari, S., "Random eigenvalue problems revisited," *Sādhanā - Proceedings of the Indian Academy of Engineering Sciences*, Vol. 31, No. 4, August 2006, pp. 293–314, (Special Issue on Probabilistic Structural Dynamics and Earthquake Engineering).

[48] Wagenknecht, T., Green, K., Adhikari, S., and Michiels, W., "Structured pseudospectra and random eigenvalues problems in vibrating systems," *AIAA Journal*, Vol. 44, No. 10, October 2006, pp. 2404–2414.

[49] Adhikari, S., "Complex modes in stochastic systems," *Advances in Vibration Engineering*, Vol. 3, No. 1, 2004, pp. 1–11.

A.3. Random matrix theory for structural dynamics

[50] Jacquelin, E., Adhikari, S., Sinou, J.-J., and Friswell, M. I., "Polynomial chaos expansion in structural dynamics: Accelerating the convergence of the first two statistical moment sequences,"

Journal of Sound and Vibration, Vol. 356, No. 11, 2015, pp. 144–154.

[51] Dey, S., Mukhopadhyay, T., Sahu, S. K., Li, G., , Rabitz, H., and Adhikari, S., "Thermal uncertainty quantification in frequency responses of laminated composite plates," *Composite Part B*, Vol. 80, No. 6, 2015, pp. 186–197.

[52] Dey, S., Mukhopadhyay, T., Adhikari, S., Khodaparast, H. H., and Kerfriden, P., "Rotational and ply-level uncertainty in response of composite conical shells," *Composite Structures*, Vol. 131, No. 6, 2015, pp. 594–605.

[53] Adhikari, S., "Uncertainty quantification in structural dynamics using non-central Wishart distribution," *International Journal of Engineering Under Uncertainty: Hazards, Assessment and Mitigation*, Vol. 2, No. 3-4, 2010, pp. 123–139.

[54] Adhikari, S. and Chowdhury, R., "A reduced-order non-intrusive approach for stochastic structural dynamics," *Computers and Structures*, Vol. 88, No. 21-22, 2010, pp. 1230–1238.

[55] Adhikari, S., "Generalized Wishart distribution for probabilistic structural dynamics," *Computational Mechanics*, Vol. 45, No. 5, May 2010, pp. 495–511.

[56] Adhikari, S. and Sarkar, A., "Uncertainty in structural dynamics: experimental validation of wishart random matrix model," *Journal of Sound and Vibration*, Vol. 323, No. 3-5, 2009, pp. 802–825.

[57] Adhikari, S., Friswell, M. I., Lonkar, K., and Sarkar, A., "Experimental case studies for uncertainty quantification in structural dynamics," *Probabilistic Engineering Mechanics*, Vol. 24, No. 4, October 2009, pp. 473–492.
★ In the first position among the top 10 most downloaded articles between July - September 2008.

[58] Adhikari, S., "Wishart random matrices in probabilistic structural mechanics," *ASCE Journal of Engineering Mechanics*, Vol. 134, No. 12, December 2008, pp. 1029–1044.

[59] Adhikari, S., "On the quantification of damping model uncertainty," *Journal of Sound and Vibration*, Vol. 305, No. 1-2, September 2007, pp. 153–171.

[60] Adhikari, S., "Matrix variate distributions for probabilistic structural mechanics," *AIAA Journal*, Vol. 45, No. 7, July 2007, pp. 1748–1762.

A.4. Computational methods for uncertainty propagation

[61] Larsen, D., Arora, V., Adhikari, S., and Clausen, H. B., "Optimization of welded K-node in offshore jacket structure including the stochastic size effect," *Marine Structures*, 2022, in press.

[62] Larsen, D., Adhikari, S., and Arora, V., "Analysis of stochastically parameterised prestressed beams and frames," *Engineering Structures*, Vol. 248, No. 12, 2021, pp. 113312.

[63] Pryse, S. E. and Adhikari, S., "Neumann enriched polynomial chaos approach for stochastic finite element problems, *Probabilistic Engineering Mechanics*," Vol. 66, No. 10, 2021, pp. 103157.

[64] Zhou, H., Jiang, Y., Adhikari, S., Yin, Q., and Cai, J., "Comparisons of design methods for beam string structure based on reliability and progressive collapse analysis," *Structures*, Vol. 33, No. 10, 2021, pp. 2166–2176.

[65] Jiang, Y., Zhao, C., Wang, L., Zhou, H., Tang, T., and Adhikari, S., "Reliability evaluation based

on multiple response surfaces method considering construction uncertainties of cable tension for a hybrid roof structure," *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, Vol. 7, No. 3, 2021, pp. 04021033.

[66] Mukhopadhyay, T., Naskar, S., Gupta, K. K., Kumar, R., Dey, S., and Adhikari, S., "Probing the stochastic dynamics of coronaviruses: Machine learning assisted deep computational insights with exploitable dimensions," *Advanced Theory and Simulations*, Vol. 4, No. 7, 2021, pp. 2000291.

[67] Chatterjee, T., Chowdhury, R., Friswell, M. I., and Adhikari, S., "A global two-layer meta-model for response statistics in robust design optimization," *Engineering Optimization*, 2021, in press.

[68] Scarth, C., Cabral, S. A. P. H., Silva, G. H. C., and Prado, A. P., "Random field simulation over curved surfaces: Applications to computational structural mechanics," *Computer Methods in Applied Mechanics and Engineering*, Vol. 345, No. 3, 2019, pp. 283–301.

[69] Scarth, C. and Adhikari, S., "Modelling spatially varying uncertainty in composite structures using lamination parameters," *AIAA Journal*, Vol. 55, No. 11, 2017, pp. 3951–3965.

[70] Chakraborty, S., Chatterjee, T., Chowdhury, R., and Adhikari, S., "A surrogate based multi-fidelity approach for robust design optimization," *Applied Mathematical Modelling*, Vol. 47, No. 7, 2017, pp. 726–744.

[71] Dey, S., Mukhopadhyay, T., and Adhikari, S., "Metamodel based high-fidelity stochastic analysis of composite laminates: A concise review with critical comparative assessment," *Composite Structures*, Vol. 171, No. 7, 2017, pp. 227–250.

[72] Pryse, S. E. and Adhikari, S., "Eigenfunction expansion based Galerkin approaches for stochastic finite element analysis," *Meccanica dei Materiali e delle Strutture*, Vol. 6, No. 1, 2017, pp. 74–81.

[73] Metya, S., Mukhopadhyay, T., Adhikari, S., and Bhattacharya, G., "System reliability analysis of soil slopes with general slip surfaces using multivariate adaptive regression splines," *Computers and Geotechnics*, Vol. 87, No. 7, 2017, pp. 212–228.
★ **Winner of the IGS - YGE Best Paper Biennial Award 2018.**

[74] Mukhopadhyay, T., Mahata, T., Dey, S., and Adhikari, S., "Probabilistic analysis and design of HCP nano-wires: An efficient surrogate based molecular dynamics simulation approach," *Journal of Materials Science & Technology*, Vol. 32, No. 12, 2016, pp. 1345–1351.

[75] Garcia-Macias, E., Castro-Triguero, R., Friswell, M. I., Adhikari, S., and Saez, A., "Metamodel-based approach for stochastic free vibration analysis of functionally graded carbon nanotube reinforced plates," *Composite Structures*, Vol. 152, No. 9, 2016, pp. 183–198.

[76] Mahata, A., Mukhopadhyay, T., and Adhikari, S., "A polynomial chaos expansion based molecular dynamics study for probabilistic strength analysis of nano-twinned copper," *Materials Research Express*, Vol. 3, No. 3, 2016, pp. 036501:1–13.

[77] Dey, S., Mukhopadhyay, T., Khodaparast, H. H., and Adhikari, S., "Fuzzy uncertainty propagation in composites using Gram-Schmidt polynomial chaos expansion," *Applied Mathematical Modelling*, Vol. 40, No. 7-8, 2016, pp. 4412–4428.

[78] Kundu, A., Adhikari, S., and Friswell, M. I., "Stochastic finite elements of discretely parametrized random systems on domains with boundary uncertainty," *International Journal for Numerical Methods in Engineering*, Vol. 100, No. 3, 2014, pp. 183–221.

[79] Adhikari, S. and Khodaparast, H. H., "A spectral approach for fuzzy uncertainty propagation in finite element analysis," *Fuzzy Sets and Systems*, Vol. 243, No. 1, 2014, pp. 1–24.

[80] Chowdhury, R. and Adhikari, S., "Fuzzy parametric uncertainty analysis of linear dynamical systems: A surrogate modeling approach," *Mechanical System and Signal Processing*, Vol. 32, No. 10, 2012, pp. 5–17.

[81] Pascual, B. and Adhikari, S., "A reduced polynomial chaos approach for stochastic finite element analysis," *Sādhanā - Proceedings of the Indian Academy of Engineering Sciences*, Vol. 37, No. 3, 2012, pp. 319–340.

[82] Murugan, S., Chowdhury, R., Adhikari, S., and Friswell, M. I., "Helicopter aeroelastic analysis with spatially uncertain rotor blade properties," *Aerospace Science and Technology*, Vol. 16, No. 1, 2012, pp. 29–39.
★ This article was included among the top 25 most downloaded Articles within the last 90 Days in June 2012.

[83] DiazDelaO, F. A. and Adhikari, S., "Bayesian assimilation of multi-fidelity finite element models," *Computers and Structures*, Vol. 92-93, No. 2, 2012, pp. 206–215.

[84] Chowdhury, R. and Adhikari, S., "Reliability analysis of uncertain dynamical systems using correlated function expansion," *International Journal of Mechanical Sciences*, Vol. 53, No. 4, 2011, pp. 281–285.

[85] DiazDelaO, F. A. and Adhikari, S., "Gaussian process emulators for the stochastic finite element method," *International Journal of Numerical Methods in Engineering*, Vol. 87, No. 6, 2011, pp. 521–540.

[86] Adhikari, S., "A reduced spectral function approach for the stochastic finite element analysis," *Computer Methods in Applied Mechanics and Engineering*, Vol. 200, No. 21-22, 2011, pp. 1804–1821.

[87] Adhikari, S., Chowdhury, R., and Friswell, M. I., "High dimensional model representation method for fuzzy structural dynamics," *Journal of Sound and Vibration*, Vol. 330, No. 7, 2011, pp. 1516–1529.

[88] Li, C. F., Adhikari, S., Cen, S., Feng, Y. T., and Owen, D. R. J., "A joint diagonalisation approach for linear stochastic systems," *Computers and Structures*, Vol. 88, No. 19-20, 2010, pp. 1137–1148.

[89] Chowdhury, R. and Adhikari, S., "High-dimensional model representation for stochastic finite element analysis," *Applied Mathematical Modelling*, Vol. 34, No. 12, 2010, pp. 3917–3932.

[90] Adhikari, S., "Sensitivity based reduced approaches for structural reliability analysis," *Sadhana - Proceedings of the Indian Academy of Engineering Sciences*, Vol. 35, No. 3, 2010, pp. 319–339.

[91] Chowdhury, R. and Adhikari, S., "Stochastic sensitivity analysis using preconditioning approach," *Engineering Computations*, Vol. 27, No. 7, 2010, pp. 841–862.
★ **Outstanding Paper Award Winner at the Literati Network Awards for Excellence 2011** (from the Emerald Group Publishing Limited).

[92] Potrykus, A. and Adhikari, S., "Dynamical response of damped structural systems driven by jump processes," *Probabilistic Engineering Mechanics*, Vol. 25, No. 3, 2010, pp. 305–314.

[93] Adhikari, S., "Asymptotic distribution method for structural reliability analysis in high dimen-

sions," *Proceedings of the Royal Society of London, Series- A*, Vol. 461, No. 2062, 2005, pp. 3141–3158.

[94] Adhikari, S., "Reliability analysis using parabolic failure surface approximation," *ASCE Journal of Engineering Mechanics*, Vol. 130, No. 12, December 2004, pp. 1407–1427.

B. Digital twins and inverse problems

B.1. Nanomechanical sensors

[95] Adhikari, S. and Khodaparast, H. H., "A multimodal approach for simultaneous mass and rotary inertia sensing from vibrating cantilever nanobeams," *Physica E: Low-dimensional Systems and Nanostructures*, Vol. 125, No. 1, 2021, pp. 114366.

[96] Adhikari, S., "Inertial mass sensing with low Q-factor vibrating microcantilevers," *Journal of Applied Physics*, Vol. 52, No. 12, 2017, pp. 512–526.

[97] Adhikari, S., "Nonlocal mechanics based computational methods for nanomechanical sensors," *Procedia Technology*, Vol. 23, No. 2, 2016, pp. 7–19.

[98] Karlicic, D., Kozic, P., Adhikari, S., Cajic, M., Murmu, T., and Lazarevic, M., "Nonlocal biosensor based on the damped vibration of single-layer graphene influenced by in-plane magnetic field," *International Journal of Mechanical Sciences*, Vol. 96-97, No. 6, 2015, pp. 132–142.

[99] Kam, K., Scarpa, F., Adhikari, S., and Chowdhury, R., "Graphene nanofilm as pressure and force sensor: A mechanical analysis," *Physica Status Solidi B*, Vol. 250, No. 10, 2013, pp. 2085–2089.

[100] Adhikari, S. and Murmu, T., "Nonlocal mass nanosensors based on vibrating monolayer graphene sheets," *Sensors & Actuators: B. Chemical*, Vol. 188, No. 11, 2013, pp. 1319–1327.

[101] Chowdhury, R., Scarpa, F., and Adhikari, S., "Molecular-scale bio-sensing using armchair graphene," *Journal of Applied Physics*, Vol. 112, No. 1, 2012, pp. 014905:1–6.

[102] Adhikari, S. and Chowdhury, R., "Zeptogram sensing from gigahertz vibration: Graphene based nanosensor," *Physica E: Low-dimensional Systems and Nanostructures*, Vol. 44, No. 7-8, 2012, pp. 1528–1534.

[103] Chowdhury, R., Adhikari, S., and Rees, P., "Zigzag graphene nanoribbon single-electron transistors," *Physica B: Condensed Matter*, Vol. 407, No. 5, 2012, pp. 855–858.

[104] Murmu, T. and Adhikari, S., "Nonlocal frequency analysis of nanoscale biosensors," *Sensors & Actuators: A. Physical*, Vol. 173, No. 1, 2012, pp. 41–48.

[105] Chowdhury, R. and Adhikari, S., "Boron nitride nanotubes as zeptogram-scale bio-nano sensors: Theoretical investigations," *IEEE Transactions on Nanotechnology*, Vol. 10, No. 4, 2011, pp. 659–667.

[106] Chowdhury, R., Adhikari, S., Rees, P., Scarpa, F., and Wilks, S. P., "Graphene based bio-sensor using transport properties," *Physical Review B*, Vol. 83, No. 4, 2011, pp. 045401:1–8.

[107] Adhikari, S. and Chowdhury, R., "The calibration of carbon nanotube based bio-nano sensors," *Journal of Applied Physics*, Vol. 107, No. 12, 2010, pp. 124322:1–8.
★ Selected for the Virtual Journal of Nanoscale Science & Technology: Volume 22, Issue 2.

[108] Chowdhury, R., Adhikari, S., and Mitchell, J., "Vibrating carbon nanotube based bio-sensors," *Physica E: Low-Dimensional Systems and Nanostructures*, Vol. 42, No. 2, December 2009, pp. 104–109.

B.2. Identification of nonlinear systems

[109] Khalil, M., Sarkar, A., Adhikari, S., and Poirel, D., "The estimation of time-invariant parameters of noisy nonlinear oscillatory systems," *Journal of Sound and Vibration*, Vol. 344, No. 5, 2015, pp. 81–100.

[110] Khalil, M., Sarkar, A., and Adhikari, S., "Tracking noisy limit cycle oscillation with nonlinear filters," *Journal of Sound and Vibration*, Vol. 329, No. 2, January 2010, pp. 150–170.

[111] Khalil, M., Sarkar, A., and Adhikari, S., "Nonlinear filters for chaotic oscillatory systems," *Nonlinear Dynamics*, Vol. 55, No. 1-2, January 2009, pp. 113–137.

B.3. Model updating and damage detection

[112] Machado, M. R., Adhikari, S., Dos-Santos, J. M. C., and Arruda, J. R. F., "Estimation of beam material random field properties via sensitivity-based model updating using experimental frequency response functions," *Mechanical Systems and Signal Processing*, Vol. 102, No. 3, 2018, pp. 180–197.

[113] Khodaparast, H. H., Govers, Y., , Dayyani, I., Adhikari, S., Link, M., and Friswell, M. I., "Fuzzy finite element model updating of the DLR AIRMOD test structure," *Applied Mathematical Modelling*, Vol. 52, No. 12, 2017, pp. 512–526.

[114] Machado, M. R., Adhikari, S., and Dos-Santos, J. M. C., "A spectral approach for damage quantification in stochastic dynamic systems," *Mechanical Systems and Signal Processing*, Vol. 88, No. 5, 2017, pp. 253–273.

[115] Boulkaibet, I., Mthembua, L., Marwala, T., Friswell, M. I., and Adhikari, S., "Finite element model updating using Hamiltonian Monte Carlo technique," *Inverse Problems in Science & Engineering*, Vol. 25, No. 7, 2017, pp. 1042–1070.

[116] Boulkaibet, I., Mthembua, L., Marwala, T., Friswell, M. I., and Adhikari, S., "Finite element model updating using the shadow hybrid Monte Carlo technique," *Mechanical Systems and Signal Processing*, Vol. 52-53, No. 1, 2015, pp. 115–132.

[117] Jacquelin, E., Adhikari, S., and Friswell, M. I., "A second-moment approach for direct probabilistic model updating in structural dynamics," *Mechanical Systems and Signal Processing*, Vol. 29, No. 5, 2012, pp. 262–283.

[118] Mthembu, L., Marwala, T., Friswell, M. I., and Adhikari, S., "Model selection in finite element model updating using the Bayesian evidence statistic," *Mechanical Systems and Signal Processing*, Vol. 25, No. 7, 2011, pp. 2399–2412.

[119] Friswell, M. I. and Adhikari, S., "Structural health monitoring using shaped sensors," *Mechanical System and Signal Processing*, Vol. 24, No. 3, March 2010, pp. 623–635.

[120] Adhikari, S. and Friswell, M. I., "Distributed parameter model updating using the Karhunen-Loève expansion," *Mechanical System and Signal Processing*, Vol. 24, No. 2, February 2010, pp. 326–339.

[121] du Bois, J. L., Adhikari, S., and Lieven, N. A. J., "Error analysis in trifilar inertia measurements,"

Experimental Mechanics, Vol. 49, No. 4, August 2009, pp. 533–540.

[122] Khalil, M., Adhikari, S., and Sarkar, A., "Linear system identification using proper orthogonal decomposition," *Mechanical System and Signal Processing*, Vol. 21, No. 8, November 2007, pp. 3123–3145.

B.4. Identification of damping

[123] Papai, F., Adhikari, S., and Wang, B., "Estimation of modal dampings for unmeasured modes," *Slovak Journal of Civil Engineering*, Vol. 20, No. 4, 2012, pp. 17–27.

[124] Adhikari, S. and Phani, A., "Experimental identification of generalized proportional damping," *Transactions of ASME, Journal of Vibration and Acoustics*, Vol. 131, No. 1, January 2009, pp. 011008:1–12.

[125] Adhikari, S. and Woodhouse, J., "Identification of damping: Part 3, symmetry-preserving method," *Journal of Sound and Vibration*, Vol. 251, No. 3, March 2002, pp. 477–490.

[126] Adhikari, S. and Woodhouse, J., "Identification of damping: Part 4, error analysis," *Journal of Sound and Vibration*, Vol. 251, No. 3, March 2002, pp. 491–504.

[127] Adhikari, S., "Lancaster's method of damping identification revisited," *Transactions of ASME, Journal of Vibration and Acoustics*, Vol. 124, No. 4, October 2002, pp. 617–627.

[128] Adhikari, S. and Woodhouse, J., "Identification of damping: Part 1, viscous damping," *Journal of Sound and Vibration*, Vol. 243, No. 1, May 2001, pp. 43–61.

[129] Adhikari, S. and Woodhouse, J., "Identification of damping: Part 2, non-viscous damping," *Journal of Sound and Vibration*, Vol. 243, No. 1, May 2001, pp. 63–88.

B.5. Digital twins

[130] Chakraborty, S. and Adhikari, S., "Machine learning based digital twin for dynamical systems with multiple time-scales," *Computers and Structures*, Vol. 243, No. 1, 2021, pp. 106410.
★ Ranked 2nd among the top 25 most downloaded articles in April 2021.

[131] Chakraborty, S., Adhikari, S., and Ganguli, R., "The role of surrogate models in the development of digital twin of dynamic systems," *Applied Mathematical Modelling*, Vol. 90, No. 2, 2021, pp. 662–681.

[132] Ganguli, R. and Adhikari, S., "The digital twin of discrete dynamic systems: Initial approaches and future challenges," *Applied Mathematical Modelling*, Vol. 77, No. 2, May 2020, pp. 1110–1128.
★ Ranked 5th among the top 25 most downloaded articles in April 2020.

C. Vibration energy harvesting / wind energy

C.1. Nonlinear vibration energy harvesting

[133] Karlicic, D., Chatterjee, T., Cajic, M., and Adhikari, S., "Parametrically amplified Mathieu–Duffing nonlinear energy harvesters, *Journal of Sound and Vibration*," Vol. 488, No. 12, 2020, pp. 115677.

[134] Karlicic, D., Cajic, M., Paunovic, S., and Adhikari, S., "Periodic response of a nonlinear axially moving beam with a nonlinear energy sink and piezoelectric attachment," *International Journal of Mechanical Sciences*, Vol. 195, No. 4, 2021, pp. 106230.

[135] Karlicic, D., Cajic, M., and Adhikari, S., "Dual-mass electromagnetic energy harvesting from galloping oscillations," *Part C: Journal of Mechanical Engineering Science*, 2021, in press.

[136] Malaji, P. V., Friswell, M. I., Adhikari, S., and Litak, G., "Enhancement of harvesting capability of coupled nonlinear energy harvesters through high energy orbits," *AIP Advances*, Vol. 10, No. 8, 2020, pp. 085315.

[137] Karlicic, D., Cajic, M., Paunovic, S., and Adhikari, S., "Nonlinear energy harvesters with coupled Duffing's oscillators," *Communications in Nonlinear Science and Numerical Simulation*, Vol. 91, No. 12, 2020, pp. 105394.

[138] Martinez-Ayuso, G., Friswell, M. I., Khodaparast, H. H., and Adhikari, S., "Experimental validation of an impact off-resonance energy harvester," *European Physical Journal*, Vol. 228, No. 7, 2019, pp. 1635–1646.

[139] Madinei, H., Khodaparast, H. H., Adhikari, S., and Friswell, M. I., "Design of MEMS piezoelectric harvesters with electrostatically adjustable resonance frequency," *Mechanical Systems and Signal Processing*, Vol. 81, No. 12, 2016, pp. 360–374.
★ Among the top 25 most downloaded articles in February 2017.

[140] Syta, A., Litak, G., Friswell, M. I., and Adhikari, S., "Multiple solutions and corresponding power output of a nonlinear bistable piezoelectric energy harvester," *European Physical Journal B*, Vol. 89, No. 4, 2016, pp. 99:1–7.

[141] Malaji, P. V., Ali, S. F., Adhikari, S., and Friswell, M. I., "Analysis of harvesting energy from mistuned multiple harvesters with and without coupling," *Procedia Engineering*, Vol. 144, No. 6, 2016, pp. 621–628.

[142] Litak, G., Friswell, M. I., and Adhikari, S., "Regular and chaotic vibration in a piezoelectric energy harvester," *Meccanica*, Vol. 51, No. 5, 2016, pp. 1017–1025.

[143] Madinei, H., Khodaparast, H. H., Adhikari, S., Friswell, M. I., and Fazeli, M., "An adaptively tuned piezoelectric MEMS vibration energy harvester using an electrostatic device," *European Physical Journal Special Topics (EPJ-ST)*, Vol. 224, No. 14, 2015, pp. 2703–2717.

[144] Friswell, M. I., Bilgen, O., Ali, S. F., Litak, G., and Adhikari, S., "The effect of noise on the response of a vertical cantilever beam energy harvester," *Zeitschrift fur Angewandte Mathematik und Mechanik (ZAMM)*, Vol. 95, No. 5, 2015, pp. 433–443.

[145] Vijayan, K., Friswell, M. I., Khodaparast, H. H., and Adhikari, S., "Non-linear energy harvesting from coupled impacting beams," *International Journal of Mechanical Sciences*, Vol. 96-97, No. 6, 2015, pp. 132–142.
★ This article ranked 3rd among the top 25 most downloaded Articles within the last 90 Days in January 2015.

[146] Borowiec, B., Litak, G., Friswell, M. I., and Adhikari, S., "Energy harvesting in a nonlinear cantilever piezoelastic beam system excited by random vertical vibrations," *International Journal of Structural Stability and Dynamics*, Vol. 14, No. 8, 2014, pp. 1440018:1–13.

[147] Ali, S. F. and Adhikari, S., "Energy harvesting dynamic vibration absorbers," *Transactions of*

ASME, Journal of Applied Mechanics, Vol. 80, No. 4, 2013, pp. 041004:1–9.

[148] Friswell, M. I., Ali, S. F., Adhikari, S., Lees, A. W., Bilgen, O., and Litak, G., "Nonlinear piezoelectric vibration energy harvesting from an inverted cantilever beam with tip mass," *Journal of Intelligent Material Systems and Structures*, Vol. 23, No. 3, 2012, pp. 1505–1521.

[149] Litak, G., Friswell, M. I., Kitio Kwuimy, C. A., Adhikari, S., and Borowiec, B., "Energy harvesting by two magnetopiezoelastic oscillators with mistuning," *Theoretical & Applied Mechanics Letters*, Vol. 2, No. 4, 2012, pp. 043009.

[150] Ali, S. F., Friswell, M. I., and Adhikari, S., "Analysis of energy harvesters for highway bridges," *Journal of Intelligent Material Systems and Structures*, Vol. 22, No. 16, 2011, pp. 1929–1938.

[151] Jacquelin, E., Adhikari, S., and Friswell, M. I., "Piezoelectric device for impact energy harvesting," *Smart Materials and Structures*, Vol. 20, No. 10, 2011, pp. 105008:1–12.

[152] Friswell, M. I. and Adhikari, S., "Sensor shape design for piezoelectric cantilever beams to harvest vibration energy," *Journal of Applied Physics*, Vol. 108, No. 1, 2010, pp. 014901:1–6.

C.2. Energy harvesting under uncertainty

[153] Adhikari, S. and Banerjee, A., "Enhanced low-frequency vibration energy harvesting with inertial amplifiers," *Journal of Intelligent Material Systems and Structures*, 2021, in press.

[154] Adhikari, S., Bhattacharya, B., and Rastogi, A., "Piezoelectric vortex induced vibration energy harvesting in a random flow field," *Smart Materials and Structures*, Vol. 29, No. 3, 2020, pp. 035034.

[155] Madinei, H., Khodaparast, H. H., Friswell, M. I., and Adhikari, S., "Minimising the effects of manufacturing uncertainties in MEMS Energy harvesters," *Energy*, Vol. 149, No. 4, 2018, pp. 990–999.

[156] Adhikari, S., Friswell, M. I., Litak, G., and Khodaparast, H. H., "Design and analysis of vibration energy harvesters based on peak response statistics," *Smart Materials and Structures*, Vol. 25, No. 6, 2016, pp. 065009:1–16.

[157] Kumar, P., Narayanan, S., Friswell, M. I., and Adhikari, S., "Fokker-Planck equation analysis of randomly excited nonlinear energy harvester," *Journal of Sound and Vibration*, Vol. 333, No. 7, 2014, pp. 2040–2053.

[158] Borowiec, B., Litak, G., Friswell, M. I., Ali, S. F., Adhikari, S., Lees, A. W., and Bilgen, O., "Energy harvesting in piezoelastic systems driven by random excitations," *International Journal of Structural Stability and Dynamics*, Vol. 14, No. 1, 2013, pp. 1340006:1–11.

[159] Litak, G., Borowiec, B., Friswell, M. I., and Adhikari, S., "Energy harvesting in a magnetopiezoelastic system driven by random excitations with uniform and Gaussian distributions," *Journal of Theoretical and Applied Mechanics*, Vol. 49, No. 3, 2011, pp. 757–764.

[160] Ali, S. F., Adhikari, S., Friswell, M. I., and Narayanan, S., "The analysis of piezomagnetoelastic energy harvesters under broadband random excitations," *Journal of Applied Physics*, Vol. 109, No. 7, 2011, pp. 074904:1–8.

[161] Ali, S. F., Friswell, M. I., and Adhikari, S., "Piezoelectric energy harvesting with parametric uncertainty," *Smart Materials & Structures*, Vol. 19, No. 10, 2010, pp. 105010:1–9.

[162] Litak, G., Friswell, M. I., and Adhikari, S., "Magnetopiezoelastic energy harvesting driven by random excitations," *Applied Physics Letters*, Vol. 96, No. 21, 2010, pp. 214103.

[163] Adhikari, S., Friswell, M. I., and Inman, D. J., "Piezoelectric energy harvesting from broadband random vibrations," *Smart Materials & Structures*, Vol. 18, No. 11, 2009, pp. 115005:1–7.
★ This article was included in the **Smart Materials and Structures Highlights 2009** (among the 25 selected papers).
★ This paper was highlighted by the leading Institute of Physics (IoP) as it was selected by the Board as a 'favourite' in the November issue, see the details.

C.3. Dynamics of wind turbines

[164] Bhattacharya, S., Lombardi, D., Amani, S., Aleem, M., Prakhya, G., Adhikari, S., Abdullahi, A., Al-exander, N., Wang, Y., Cui, L., Jalbi, S., Pakrashi, V., Li, W., Mendoza, J., and Vimalan, N., "Physical modelling of offshore wind turbine foundations for TRL (Technology Readiness Level) studies," *Journal of Marine Science and Engineering*, Vol. 9, No. 6, 2021, pp. 589.
★ This paper was marked as the featured article by the Editorial board in June 2021.

[165] Adhikari, S. and Bhattacharya, S., "A general frequency adaptive framework for damped response analysis of wind turbines," *Soil Dynamics and Earthquake Engineering*, Vol. 143, No. 2, 2021, pp. 106605.

[166] Adhikari, S. and Bhattacharya, S., "Dynamic analysis of wind turbine towers on flexible foundations," *Shock and Vibration*, Vol. 19, No. 1, 2012, pp. 37–56.

[167] Adhikari, S. and Bhattacharya, S., "Vibrations of wind-turbines considering soil-structure interaction," *Wind and Structures, An International Journal*, Vol. 14, No. 2, 2011, pp. 85–112.

[168] Bhattacharya, S. and Adhikari, S., "Experimental validation of soil-structure interaction of offshore wind turbines," *Soil Dynamics and Earthquake Engineering*, Vol. 31, No. 4-6, 2011, pp. 805–816.

D. Mechanics of materials and structures across length-scales

D.1. Mechanics of metamaterials

[169] Muherkee, S. and Adhikari, S., "The in-plane mechanics of a family of curved 2D lattices, *Composite Structures*," Vol. 280, No. 1, 2022, pp. 114859.
★ This paper has been covered by several media outlets: (a) Swansea University Press Release, (b) AZO Materials, (c) Tech Xplore, (d) nanowerk, (e) EurekAlert: American Association for the Advancement of Science (AAAS), (f) Lab Manager, and (g) innovations report.
★ Altmetric score 47: This paper is in the top 5% of all research outputs ever tracked by Altmetric.

[170] Singh, A., Mukhopadhyay, T., Adhikari, S., and Bhattacharya, B., "Active multi-physical modulation of Poisson's ratios in composite piezoelectric lattices: On-demand sign reversal, *Composite Structures*," Vol. 280, No. 1, 2022, pp. 114857.

[171] Chatterjee, T., Karlicic, D., Adhikari, S., and Friswell, M. I., "Wave propagation in randomly parameterized 2D lattices via machine learning," *Composite Structures*, Vol. 275, No. 11, 2021, pp. 114386.

[172] Muherkee, S. and Adhikari, S., "A general analytical framework for the mechanics of heterogeneous hexagonal lattices," *Thin-Walled Structures*, Vol. 167, No. 10, 2021, pp. 108188.

[173] Adhikari, A. B. S. and Hussein, M. I., "Inertial amplification band-gap generation by coupling a levered mass with a locally resonant mass," *International Journal of Mechanical Sciences*, Vol. 207, No. 10, 2021, pp. 106630.

[174] Adhikari, S., "The eigenbuckling analysis of hexagonal lattices: Closed-form solutions," *Proceedings of the Royal Society of London, Series - A*, Vol. 477, No. 2251, 2021, pp. 20210244.
★ This paper has been covered by several media outlets: (a) Swansea University Press Release, (b) phys.org, (c) scienmag.com, (d) EurekAlert: American Association for the Advancement of Science (AAAS) and (e) AZO Materials.
★ Altmetric score 31: This paper is in the top 5% of all research outputs ever tracked by Altmetric.

[175] Patrick, J., Adhikari, S., and Hussein, M. I., "Brillouin-zone characterization of piezoelectric material intrinsic energy harvesting capacity," *Smart Materials and Structures*, Vol. 30, No. 8, 2021, pp. 085022.

[176] Cajic, M., Christensen, J., and Adhikari, S., "Tuning of topological interface modes in an elastic beam array system with inerters," *International Journal of Mechanical Sciences*, Vol. 205, No. 9, 2021, pp. 106573.

[177] Adhikari, S., "The in-plane mechanical properties of highly compressible and stretchable 2D lattices," *Composite Structures*, Vol. 272, No. 9, 2021, pp. 114167.

[178] Adhikari, S., Mukhopadhyay, T., and Liu, X., "Broadband dynamic elastic moduli of honeycomb lattice materials: A generalized analytical approach," *Mechanics of Materials*, Vol. 157, No. 6, 2021, pp. 103796.
★ Ranked 17 among the top 25 most downloaded articles in June 2021.

[179] Dwivedi, A., Banerjee, A., Adhikari, S., and Bhattacharya, B., "Optimal electromechanical bandgaps in piezo-embedded mechanical metamaterials," *International Journal of Mechanics and Materials in Design*, Vol. 17, No. 5, 2021, pp. 419–439.

[180] Cajic, M., Karlicic, D., Paunovic, S., and Adhikari, S., "Bloch waves in an array of elastically connected periodic slender structures," *Mechanical Systems and Signal Processing*, Vol. 155, No. 6, 2021, pp. 107591.

[181] Gupta, V., Adhikari, S., and Bhattacharya, B., "Exploring the dynamics of hourglass shaped lattice metastructures," *Nature Scientific Reports*, Vol. 10, No. 12, 2020, pp. 20943.
★ This was extensively covered in printed media and national news in India: `https://buff.ly/3qwdxAQ`, `https://buff.ly/36JD01V`, `https://buff.ly/2Im3U6G`.

[182] Singh, A., Mukhopadhyay, T., Adhikari, S., and Bhattacharya, B., "Equivalent in-plane voltage-dependent elastic moduli of piezoelectric 2D lattices," *International Journal of Solids and Structures*, Vol. 208-209, No. 1, 2021, pp. 31–48.

[183] Karlicic, D., Cajic, M., Chatterjee, T., , and Adhikari, S., "Wave propagation in mass embedded and pre-stressed hexagonal lattices," *Composite Structures*, Vol. 256, No. 1, 2021, pp. 113087.

[184] Mukhopadhyay, T., Naskar, S., and Adhikari, S., "Anisotropy tailoring in geometrically isotropic multi-material lattices," *Extreme Mechanics Letters*, Vol. 40, No. 10, 2020, pp. 100934.

[185] Mukhopadhyay, T., Mahata, A., Naskar, S., and Adhikari, S., "Probing the effective Young's modulus of 'magic angle' inspired multi-functional twisted nano-heterostructures," *Advanced Theory and Simulations*, 2020, 2000129.

[186] Karlicic, D., Cajic, M., Paunovic, S., and Adhikari, S., "A fractional calculus approach to metadamping in phononic crystals and acoustic metamaterials," *Theoretical and Applied Mechanics*, Vol. 47, No. 1, 2020, pp. 81–97.

[187] Bhaskar, J., Sharma, A., Bhattacharya, B., and Adhikari, S., "A review on shape memory alloy reinforced polymer composite materials and structures," *Smart Materials and Structures*, Vol. 29, No. 7, 2020, pp. 073001.

[188] Adhikari, S., Mukhopadhyay, T., Shaw, A., and Lavery, N. P., "Realisation of the onset of negative Young's moduli in lattice materials: An experimental investigation," *International Journal of Engineering Science*, Vol. 150, No. 5, 2020, pp. 103231.
★ Ranked 15 among the top 25 most downloaded articles in April 2020.

[189] Mukhopadhyay, T., Adhikari, S., and Alu, A., "Theoretical limits for negative elastic moduli in subacoustic lattice materials," *Physical Review B*, Vol. 99, 2019, pp. 094108:1-4.

[190] Mukhopadhyay, T., Adhikari, S., and Alu, A., "Probing the frequency-dependent elastic moduli of lattice materials," *Acta Materialia*, Vol. 165, No. 2, 2019, pp. 654–665.

[191] Mukhopadhyay, T., Mahata, T., Adhikari, S., and Zaeem, M. A., "Probing the shear modulus of two-dimensional multiplanar nanostructures and heterostructures," *Nanoscale*, Vol. 10, No. 11, 2018, pp. 5280–5294.

[192] Mukhopadhyay, T., Adhikari, S., and Batou, A., "Frequency domain homogenization for the viscoelastic properties of spatially correlated quasi-periodic lattices," *International Journal of Mechanical Science*, Vol. 150, No. 1, 2019, pp. 784–806.

[193] Mukhopadhyay, T., Mahata, T., Zaeem, M. A., and Adhikari, S., "Effective mechanical properties of multilayer nano-heterostructures," *Nature Scientific Reports*, Vol. 7, No. 1, 2017, pp. 15818:1–13.
★ Selected in the *top 100 in Materials Science* collection by Nature Scientific Reports, April 2018 (was placed within the 26-50 band: `https://go.nature.com/3epVXsV`).

[194] Martinez-Ayuso, G., Friswell, M. I., Adhikari, S., Khodaparast, H. H., and Berger, H., "Homogenization of porous piezoelectrical materials," *International Journal of Solid and Structures*, Vol. 113-114, No. 5, 2017, pp. 218–229.

[195] Mukhopadhyay, T. and Adhikari, S., "Effective in-plane elastic properties of quasi-random spatially irregular hexagonal lattices," *International Journal of Engineering Science*, Vol. 119, No. 10, 2017, pp. 142–179.
★ Among the top 25 most downloaded articles in October 2017.

[196] Mukhopadhyay, T., Mahata, T., Zaeem, M. A., and Adhikari, S., "Effective elastic properties of two dimensional multiplanar hexagonal nano-structures," *2D Materials*, Vol. 4, No. 2, 2017, pp. 025006:1–15.

[197] Mukhopadhyay, T. and Adhikari, S., "Stochastic mechanics of metamaterials," *Composite Structures*, Vol. 162, No. 3, 2017, pp. 85–97.

[198] Mukhopadhyay, T. and Adhikari, S., "Effective in-plane elastic properties of auxetic honeycombs

with spatial irregularity," *Mechanics of Materials*, Vol. 95, No. 2, 2016, pp. 204–222.

[199] Mukhopadhyay, T. and Adhikari, S., "Equivalent in-plane elastic properties of irregular honeycombs: An analytical approach," *International Journal of Solids and Structures*, Vol. 91, No. 8, 2016, pp. 169–184.

[200] Mukhopadhyay, T. and Adhikari, S., "Free vibration of sandwich panels with randomly irregular honeycomb core," *ASCE Journal of Engineering Mechanics*, Vol. 141, No. 6, 2016, pp. 06016008:1–5.

D.2. Dynamics of nonlocal continuous systems

[201] Zhang, D. P., Lei, Y., and Adhikari, S., "Flexoelectric effect on vibration responses of piezoelectric nanobeams embedded in viscoelastic medium based on nonlocal elasticity theory," *Acta Mechanica*, Vol. 229, No. 6, 2018, pp. 2379–2392.

[202] Karlicic, D., Kozic, P., Murmu, T., and Adhikari, S., "Vibration insight of a nonlocal viscoelastic coupled multi-nanorod system," *European Journal of Mechanics - A/Solids*, Vol. 55, No. 12, 2015, pp. 132–145.

[203] Karlicic, D., Adhikari, S., Murmu, T., and Cajic, M., "Exact closed-form solution for non-local vibration and biaxial buckling of bonded multi-nanoplate system," *Composites Part B*, Vol. 66, No. 2, 2014, pp. 328–339.

[204] Karlicic, D., Cajic, M., Murmu, T., and Adhikari, S., "Nonlocal longitudinal vibration of viscoelastically coupled double-nanorod systems," *European Journal of Mechanics - A/Solids*, Vol. 49, No. 1, 2015, pp. 183–196.
★ Among the top 25 most downloaded articles in November-December 2014.

[205] Murmu, T., Adhikari, S., McCarthy, M., and Wang, C. Y., "Insights into relative lower frequencies and buckling loads of monolayer graphene sheets via nonlocal elasticity theory: Size-dependent Young's modulus approach," *Nanoscience and Nanotechnology Letters*, Vol. 5, No. 10, 2013, pp. 1097–1102.

[206] Allegri, G., Scarpa, F., Chowdhury, R., and Adhikari, S., "Wave propagation in periodically supported nanoribbons: a nonlocal elasticity approach," *Transactions of ASME, Journal of Vibration and Acoustics*, Vol. 135, No. 4, 2013, pp. 041017:1–8.

[207] Murmu, T. and Adhikari, S., "Nonlocal elasticity based vibration of initially pre-stressed coupled nanobeam systems," *European Journal of Mechanics - A/Solids*, Vol. 34, No. 1, 2012, pp. 52–62.
★ This article ranked 5th among the top 25 hottest Articles, January to March 2012.
★ This article ranked 2nd among the Most downloaded Articles within the last 90 Days in June 2012.

[208] Murmu, T. and Adhikari, S., "Nonlocal vibration of bonded double-nanoplate-systems," *Composites Part B: Engineering*, Vol. 42, No. 7, 2011, pp. 1901–1911.

[209] Murmu, T. and Adhikari, S., "Torsional vibration of carbon nanotube-buckyball systems based on nonlocal elasticity theory," *Physica E: Low-dimensional Systems and Nanostructures*, Vol. 43, No. 6, 2011, pp. 1276–1280.

[210] Wang, C. W., Murmu, T., and Adhikari, S., "Mechanisms of nonlocal effect on the vibration of nanoplates," *Applied Physics Letters*, Vol. 98, No. 15, 2011, pp. 153101:1–3.
★ Selected for the Virtual Journal of Nanoscale Science & Technology: Volume 23, Issue 16.

[211] Murmu, T. and Adhikari, S., "Axial instability of double-nanobeam-systems," *Physics Letters A*, Vol. 375, No. 3, 2011, pp. 601–608.

[212] Murmu, T. and Adhikari, S., "Nonlocal vibration of carbon nanotubes with attached buckyballs at tip," *Mechanics Research Communications*, Vol. 38, No. 1, 2011, pp. 62–67.
★ Ranked number 1 among the top 25 hottest articles between January - March 2011.

[213] Murmu, T. and Adhikari, S., "Nonlocal effects in the longitudinal vibration of double-nanorod systems," *Physica E: Low-dimensional Systems and Nanostructures*, Vol. 43, No. 1, 2010, pp. 415–422.

[214] Murmu, T. and Adhikari, S., "Scale-dependent vibration analysis of prestressed carbon nanotubes undergoing rotation," *Journal of Applied Physics*, Vol. 108, No. 12, 2010, pp. 123507:1–7.
★ Selected for the Virtual Journal of Nanoscale Science & Technology: Volume 23, Issue 1.

[215] Murmu, T. and Adhikari, S., "Nonlocal transverse vibration of double-nanobeam-systems," *Journal of Applied Physics*, Vol. 108, No. 8, 2010, pp. 083514:1–9.

D.3. Nonlocal magneto-elasto dynamics

[216] Karlicic, D., Cajic, M., Adhikari, S., Kozic, P., and Murmu, T., "Vibrating nonlocal multi--nanoplate system under inplane magnetic field," *European Journal of Mechanics - A/Solids*, Vol. 64, No. 7-8, 2017, pp. 29–45.

[217] Mukhopadhyay, T., Mahata, A., Dey, S., and Adhikari, S., "Probabilistic analysis and design of HCP nanowires: An efficient surrogate based molecular dynamics simulation approach," *Journal of Materials Science & Technology*, Vol. 32, No. 12, 2016, pp. 1345–1351.

[218] Karlicic, D., Cajic, M., Murmu, T., Kozic, P., and Adhikari, S., "Nonlocal longitudinal vibration of a complex multi-nanorod system affected by transversal magnetic field," *Meccanica*, Vol. 50, No. 6, 2015, pp. 1605–1621.

[219] Ghavanloo, E., Fazelzadeh, S., Murmu, T., and Adhikari, S., "Radial breathing-mode frequency of elastically confined spherical nanoparticles subjected to circumferential magnetic field," *Physica E: Low-dimensional Systems and Nanostructures*, Vol. 66, No. 2, 2015, pp. 228–233.

[220] Karlicic, D., Cajic, M., Murmu, T., and Adhikari, S., "Dynamics of multiple viscoelastic carbon nanotube based nanocomposites with axial magnetic field," *Journal of Applied Physics*, Vol. 115, No. 23, 2014, pp. 234303:1–14.

[221] Murmu, T., Adhikari, S., and McCarthy, M., "Axial vibration of embedded nanorods under transverse magnetic field effects via nonlocal elastic continuum theory," *Journal of Computational and Theoretical Nanoscience*, Vol. 11, No. 5, 2014, pp. 1230–1236.

[222] Murmu, T., McCarthy, M., and Adhikari, S., "In-plane magnetic field affected transverse vibration of embedded single-layer graphene sheets using equivalent nonlocal elasticity approach," *Composite Structures*, Vol. 96, No. 2, 2013, pp. 57–63.

[223] Murmu, T., Adhikari, S., and McCarthy, M., "Vibration response of double-walled carbon nanotubes subjected to an externally applied longitudinal magnetic field: A nonlocal elasticity ap-

proach," *Journal of Sound and Vibration*, Vol. 331, No. 23, 2012, pp. 5069–5086.

[224] Murmu, T., McCarthy, M., and Adhikari, S., "Nonlocal elasticity based magnetic field affected vibration response of double single-walled carbon nanotube systems," *Journal of Applied Physics*, Vol. 111, No. 11, 2012, pp. 113511:1–7.

D.4. Atomistic computational method - Finite element / Molecular mechanics

[225] Chandra, Y., Adhikari, S., Mukhopadhyay, T., and Muherkee, S., "Unfolding the mechanical properties of buckypaper composites: Nano to macro scale coupled atomistic-continuum simulations," *Engineering with Computers*, 2022, in press.

[226] Chatterjee, T., Chakraborty, S., Goswami, S., Adhikari, S., and Friswell, M. I., "Robust topological designs for extreme metamaterial micro-structures," *Nature Scientific Reports*, Vol. 11, No. 7, 2021, pp. 15221.
★ This paper has been covered by several media outlets: (a) Swansea University Press Release, (b) phys.org, (c) Science Daily, (d) Mirage News and (e) AZO Materials.
★ Altmetric score 33: This paper is in the top 5% of all research outputs ever tracked by Altmetric.

[227] Chandra, Y., Adhikari, S., Saavedra Flores, E. I., and Figiel, L., "Advances in finite element modelling of graphene and associated nanostructures," *Materials Science and Engineering: R: Reports*, Vol. 140, No. 4, 2020, pp. 100544:1–39.

[228] Chandra, Y., Saavedra Flores, E. I., and Adhikari, S., "Buckling of 2D nano hetero structures with moire patterns," *Computational Materials Science*, Vol. 177, No. 5, 2020, pp. 109507.

[229] Chandra, Y., Mukhopadhyay, T., Adhikari, S., and Figiel, L., "Size-dependent dynamic characteristics of graphene based multi-layer nano hetero-structures," *Nanotechnology*, Vol. 31, No. 14, 2020, pp. 145705.

[230] Chandra, Y., Flores, E. I. S., Scarpa, F., and Adhikari, S., "Buckling of hybrid nanocomposites with embedded graphene and carbon nanotubes," *Physica E: Low-dimensional Systems and Nanostructures*, Vol. 83, No. 9, 2016, pp. 434–441.

[231] Chandra, Y., Scarpa, F., Adhikari, S., Zhang, J., Flores, E. S., and Peng, H.-X., "Pullout strength of graphene and carbon nanotube/epoxy composites," *Composites Part B: Engineering*, Vol. 102, No. 10, 2016, pp. 1–8.

[232] Flores, E. I. S., Ajaj, R. M., Adhikari, S., Dayyani, I., and Castro-Triguero, R., "Hyperelastic tension of graphene," *Applied Physics Letters*, Vol. 106, No. 6, 2015, pp. 061901:1–4.

[233] Flores, E. I. S., Adhikari, S., Friswell, M. I., and Scarpa, F., "A hybrid atomistic approach for the mechanics of deoxyribonucleic acid molecules," *ASME Journal of Nanotechnology in Engineering and Medicine*, Vol. 4, No. 4, 2013, pp. 041006:1–7.

[234] Zhang, J., Wang, C. W., and Adhikari, S., "Surface effects on the electrostatic potential generated in a bent gallium nitride nanowire," *IEEE Transactions on Nanotechnology*, Vol. 13, No. 3, 2014, pp. 600–606.

[235] Zhang, J., Wang, C. W., and Adhikari, S., "Fracture and buckling of piezoelectric nanowires subject to an electric field," *Journal of Applied Physics*, Vol. 114, No. 17, 2013, pp. 174306:1–7.

[236] Zhang, J., Wang, C. W., and Adhikari, S., "Molecular structure-dependent deformations in boron

nitride nanostructures subject to an electrical filed," *Journal of Physics D: Applied Physics*, Vol. 46, No. 23, 2013, pp. 235303:1–6.

[237] Zhang, J., Wang, C. W., Chowdhury, R., and Adhikari, S., "Size and temperature dependent elastic and piezoelectric properties of gallium nitride nanobelts," *Scripta Materialia*, Vol. 68, No. 8, 2013, pp. 627–630.

[238] Chandra, Y., Scarpa, F., Chowdhury, R., Adhikari, S., and Seinz, J., "Multiscale hybrid atomistic-FE approach for the nonlinear tensile behaviour of graphene nanocomposites," *Composites Part A: Applied Science and Manufacturing*, Vol. 46, No. 3, 2013, pp. 147–153.

[239] Zhang, J., Wang, C. W., Chowdhury, R., and Adhikari, S., "Small-scale effect on the mechanical properties of metallic nanotubes," *Applied Physics Letters*, Vol. 101, No. 9, 2012, pp. 093109:1–4.

[240] Murmu, T., Seinz, J., Adhikari, S., and Arnold, C., "Nonlocal buckling of double-nanoplate-systems under biaxial compression," *Composites Part B*, Vol. 45, No. 1, 2013, pp. 84–94.

[241] Zhang, J., Wang, C. W., and Adhikari, S., "Surface effect on the buckling of piezoelectric nanofilms," *Journal of Physics D*, Vol. 45, No. 28, 2012, pp. 285301:1–8.

[242] Chandra, Y., Chowdhury, R., Scarpa, F., Adhikari, S., Seinz, J., Arnold, C., Murmu, T., and Bould, D., "Vibration frequency of graphene based composites: A multiscale approach," *Materials Science and Engineering B*, Vol. 177, No. 3, 2012, pp. 303–310.

[243] Boldrin, L., Scarpa, F., Chowdhury, R., Adhikari, S., and Ruzzene, M., "Effective mechanical properties of hexagonal boron nitride nanosheets," *Nanotechnology*, Vol. 22, No. 50, 2011, pp. 505702:1–7.
★ This article was highlighted by the leading Institute of Physics (IoP) nanotechnology website nanotechweb.org in their latest journal highlights articles (November 2011), see http://nanotechweb.org/cws/article/lab/47946.

[244] Murmu, T., Seinz, J., Adhikari, S., and Arnold, C., "Nonlocal buckling behaviour of bonded double-nanoplate-system," *Journal of Applied Physics*, Vol. 110, No. 8, 2011, pp. 084316:1–8.

[245] Flores, E. I. S., Adhikari, S., Friswell, M. I., and Scarpa, F., "Hyperelastic axial buckling of single wall carbon nanotubes," *Physica E: Low-dimensional Systems and Nanostructures*, Vol. 44, No. 2, 2011, pp. 525–529.

[246] Chandra, Y., Chowdhury, R., Adhikari, S., and Scarpa, F., "Elastic instability of bilayer graphene using atomistic finite element," *Physica E: Low-dimensional Systems and Nanostructures*, Vol. 44, No. 1, 2011, pp. 12–16.

[247] Scarpa, F., Chowdhury, R., Kam, K., Adhikari, S., and Ruzzene, M., "Dynamics of mechanical waves in periodic graphene nanoribbon assemblies," *Nanoscale Research Letters*, Vol. 6, 2011, pp. 430:1–10.

[248] Chandra, Y., Chowdhury, R., Scarpa, F., and Adhikari, S., "Vibrational characteristics of bilayer graphene sheets," *Thin Solid Films*, Vol. 519, No. 18, 2011, pp. 6026–6032.

[249] Scarpa, F., Chowdhury, R., and Adhikari, S., "Thickness and in-plane elasticity of Graphane," *Physics Letters A*, Vol. 375, No. 20, 2011, pp. 2071–2074.

[250] Flores, E. I. S., Adhikari, S., Friswell, M. I., and Scarpa, F., "Hyperelastic finite element model for single wall carbon nanotubes in tension," *Computational Materials Science*, Vol. 50, No. 3,

2011, pp. 1083–1087.

[251] Scarpa, F., Adhikari, S., and Phani, A., "Auxeticity in single layer graphene sheets," *International Journal of Novel Materials*, Vol. 1, No. 2, 2010, pp. 39–43.

[252] Scarpa, F., Peng, H. X., Boldri, L., Remillat, C. D. L., and Adhikari, S., "Coupled thermo-mechanics of single-wall carbon nanotubes," *Applied Physics Letters*, Vol. 97, No. 15, 2010, pp. 151903.

[253] Chowdhury, R., Adhikari, S., and Rees, P., "Optical properties of silicon doped ZnO," *Physica B: Condensed Matter*, Vol. 405, No. 23, 2010, pp. 4763–4767.

[254] Chowdhury, R., Adhikari, S., Wang, C. Y., and Scarpa, F., "A molecular mechanics approach for the vibration of single walled carbon nanotubes," *Computational Materials Science*, Vol. 48, No. 4, 2010, pp. 730–735.

[255] Chowdhury, R., Adhikari, S., and Scarpa, F., "Elasticity and piezoelectricity of zinc oxide nanostructure," *Physica E: Low-dimensional Systems and Nanostructures*, Vol. 42, No. 8, 2010, pp. 2036–2040.

[256] Scarpa, F., Adhikari, S., and Chowdhury, R., "The transverse elasticity of bilayer graphene," *Physics Letters A*, Vol. 374, No. 19-20, April 2010, pp. 2053–2057.

[257] Scarpa, F., Adhikari, S., Gil, A. J., and Remillat, C., "The bending of single layer graphene sheets: Lattice versus continuum approach," *Nanotechnology*, Vol. 20, No. 12, 2010, pp. 085405.

[258] Chowdhury, R., Rees, P., Adhikari, S., Scarpa, F., and Wilks, S., "Electronic Structures of Silicon doped ZnO," *Physica B: Condensed Matter*, Vol. 405, No. 8, April 2010, pp. 1980–1985.

[259] Scarpa, F., Adhikari, S., and Wang, C. Y., "Nanocomposites with auxetic nanotubes," *International Journal of Smart and Nanomaterials*, Vol. 1, No. 2, 2010, pp. 83–94.

[260] Scarpa, F., Adhikari, S., and Wang, C. Y., "Mechanical properties of non reconstructed defective single wall carbon nanotubes," *Journal of Physics D: Applied Physics*, Vol. 42, No. 085306, 2009, pp. 1–6.

[261] Scarpa, F., Adhikari, S., and Phani, A., "Effective mechanical properties of single graphene sheets," *Nanotechnology*, Vol. 20, January 2009, pp. 065709:1–11.
★ This article was highlighted by the leading Institute of Physics (IoP) nanotechnology website nanotechweb.org in their technology update section (January 2009), see http://nanotechweb.org/cws/article/tech/37389.
★ This article was included in the **Nanotechnology Highlights 2009** (among the 8 selected papers in Materials: Properties characterization and tools section).
★ This research was covered by the **Solid state and materials research news**, Phys. Status Solidi RRL 2-3/2009 (pp. A33-A36).
★ Over 500 citations in Google Scholar.

D.5. Structural dynamics using continuum theory

[262] Signh, S. K., Banerjee, A., Verma, R. K., and Adhikari, S., "Spectral element formulation for damped transversely isotropic Micropolar-Cosserat layered composite panels," *Mechanics of Materials*, Vol. 160, No. 9, 2021, pp. 103898.

[263] Adhikari, S. and Chowdhury, R., "Vibration spectra of fullerene family," *Physics Letters A*, Vol. 375, No. 22, 2011, pp. 1276–1280.

[264] Wang, C. W. and Adhikari, S., "ZnO-CNT composite nanowires as nanoresonators," *Physics Letters A*, Vol. 375, No. 22, 2011, pp. 2171–2175.

[265] Chowdhury, R., Adhikari, S., Scarpa, F., and Friswell, M. I., "Transverse vibration of single layer graphene sheets," *Journal of Physics D: Applied Physics*, Vol. 44, No. 20, 2011, pp. 205401:1–11.

[266] Chowdhury, R., Adhikari, S., and Scarpa, F., "Vibrational analysis of ZnO nanotubes: A molecular mechanics approach," *Applied Physics A*, Vol. 102, No. 2, 2011, pp. 301–308.

[267] Chowdhury, R., Wang, C. Y., Adhikari, S., and Scarpa, F., "The vibration of boron nitride nanotubes," *Nanotechnology*, Vol. 20, No. 12, 2010, pp. 365702:1–9.

[268] Wang, C. Y., Zhao, Y., Adhikari, S., and Feng, Y. T., "Vibration of axially strained triple-wall carbon nanotubes," *Journal of Computational and Theoretical Nanoscience*, Vol. 7, No. 11, 2010, pp. 2176–2185.

[269] Chowdhury, R., Wang, C. Y., Adhikari, S., and Tong, F. M., "Sliding oscillations of multiwall carbon nanotubes," *Physica E: Low-dimensional Systems and Nanostructures*, Vol. 42, No. 9, 2010, pp. 2295–2300.

[270] Wang, C. Y., Li, C. F., and Adhikari, S., "Axisymmetric vibration of singlewall carbon nanotubes in water," *Physics Letters A*, Vol. 374, No. 24, 2010, pp. 2467–2474.

[271] Gil, A. J., Adhikari, S., Scarpa, F., and Bonet, J., "The wrinkling of single-layer graphene sheets," *Journal of Physics: Condensed Matter*, Vol. 22, No. 14, 2010, pp. 145302.

[272] Chowdhury, R., Wang, C. Y., and Adhikari, S., "Low frequency vibration of multiwall carbon nanotubes with heterogeneous boundaries," *Journal of Physics D: Applied Physics*, Vol. 43, No. 085405, 2010, pp. 1–8.

[273] Wang, C. Y., Li, C. F., and Adhikari, S., "Dynamic behaviors of microtubules in cytosol," *Journal of Biomechanics*, Vol. 42, No. 9, August 2009, pp. 1270–1274.

[274] Tong, F. M., Wang, C. Y., and Adhikari, S., "Axial buckling of multiwall carbon nanotubes with heterogeneous boundary conditions," *Journal of Applied Physics*, Vol. 105, May 2009, pp. 094325:1–7.

[275] Scarpa, F. and Adhikari, S., "Uncertainty modelling of carbon nanotube terahertz oscillators," *Journal of Non-Crystalline Solids*, Vol. 354, No. 35-39, October 2008, pp. 4151–4156.

[276] Scarpa, F. and Adhikari, S., "A mechanical equivalence for the Poisson's ratio and thickness of C-C bonds in single wall carbon nanotubes," *Journal of Physics D: Applied Physics*, Vol. 41, No. 085306, 2008, pp. 1–5.

E. Dynamics of complex systems

E.1. Discrete damped systems

[277] Chowdhury, S., Banerjee, A., and Adhikari, S., "Enhanced seismic base isolation using inertial amplifiers," *Structures*, Vol. 33, No. 10, 2021, pp. 1340–1353.

[278] Lakshminarayana, S., Adhikari, S., and Maple, C., "Analysis of IoT-based load altering attacks against power grids using the theory of second-order dynamical systems," *IEEE Transactions on*

Smart Grid, 2021, in press.

[279] Batou, A. and Adhikari, S., "Optimal parameters of viscoelastic tuned-mass dampers," *Journal of Sound and Vibration*, 2019, Vol. 445, No. 4, 2019, pp. 17–28.

[280] Khodaparast, H. H., Madinei, H., Friswell, M. I., Adhikari, S., Coggon, S., and Cooper, J., "An extended harmonic balance method based on incremental nonlinear control parameters," *Mechanical Systems and Signal Processing*, Vol. 85, No. 2, 2017, pp. 716–729.

[281] Chakraborty, S., Chatterjee, T., Chowdhury, R., and Adhikari, S., "Robust design optimization for crashworthiness of vehicle side impact," *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering*, Vol. 3, No. 3, 2017, pp. 031002:1–9.

[282] Chandrashaker, A., Adhikari, S., and Friswell, M. I., "Quantification of vibration localization in periodic structures," *ASME Journal of Vibration and Acoustics*, Vol. 138, No. 2, 2016, pp. 021002:1–9.

[283] Dey, S., Mukhopadhyay, T., Adhikari, S., and Khodaparast, H. H., "A response surface modelling approach for resonance driven reliability based optimization of composite shells," *Periodica Polytechnica Civil Engineering*, Vol. 60, No. 1, 2016, pp. 103–111.

[284] Beaverstock, C., Friswell, M. I., Adhikari, S., Richardson, T. S., and Du Bois, J. L., "Automatic mode tracking in flight mechanics using a spanning algorithm," *Aerospace Science and Technology*, Vol. 47, No. 12, 2015, pp. 54–67.

[285] Dey, S., Sarkar, S., Karmakar, A., and Adhikari, S., "Effect of twist and rotation on vibration of functionally graded conical shells," *International Journal of Mechanics and Materials in Design*, Vol. 11, No. 4, 2015, pp. 425–437.

[286] Mukhopadhyay, T., Chowdhury, R., Chakrabarti, A., and Adhikari, S., "Optimum design of FRP bridge deck: an efficient RS-HDMR based approach," *Structural and multidisciplinary optimization*, Vol. 52, No. 3, 2015, pp. 459–477.

[287] Adhikari, S., Murmu, T., Gilchrist, D. J. E., and McCarthy, M. A., "Nonlocal normal modes for nanoscale dynamical systems," *Mechanical System and Signal Processing*, Vol. 60-61, No. 8, 2015, pp. 583–603.

[288] Dey, S., Adhikari, S., and Karmakar, A., "Impact response of functionally graded conical shells," *Latin American Journal of Solids and Structures*, Vol. 12, No. 1, 2015, pp. 133–152.

[289] Adhikari, S., "An iterative approach for nonproportionally damped systems," *Mechanics Research Communications*, Vol. 38, No. 3, 2011, pp. 226–230.

[290] du Bois, J. L., Adhikari, S., and Lieven, N. A. J., "On the quantification of eigenvalue curve veering: A veering index," *Transactions of ASME, Journal of Applied Mechanics*, Vol. 78, No. 4, 2011, pp. 041007:1–8.

[291] Kerfriden, P., Gosselet, P., Adhikari, S., and Bordas, S., "Bridging the proper orthogonal decomposition methods and augmented Newton-Krylov algorithms: An adaptive model order reduction for highly nonlinear mechanical problems," *Computer Methods in Applied Mechanics and Engineering*, Vol. 200, No. 5-8, 2011, pp. 850–866.

[292] DiazDelaO, F. A. and Adhikari, S., "Structural dynamic analysis using Gaussian process emulators," *Engineering Computations*, Vol. 27, No. 5, 2010, pp. 580–605.

[293] du Bois, J. L., Adhikari, S., and Lieven, N. A. J., "Mode veering in stressed framed structures," *Journal of Sound and Vibration*, Vol. 322, No. 4-5, May 2009, pp. 1117–1124.

[294] Phani, S. A. and Adhikari, S., "Rayleigh quotient and dissipative systems," *Transactions of ASME, Journal of Applied Mechanics*, Vol. 75, No. 6, November 2008, pp. 061005:1–6.
★ Among the top 10 most downloaded articles in August 2008.

[295] Murugan, S., Flores, E. I. S., Adhikari, S., and Friswell, M. I., "Optimal design of variable fibre spacing composites for morphing aircraft skins," *Composite Structures*, Vol. 94, No. 5, 2012, pp. 1626–1633.

[296] Ajaj, R. M., Friswell, M. I., Flores, E. I. S., Keane, A., Isikveren, A. T., Allegri, G., and Adhikari, S., "An integrated conceptual design study using span morphing technology," *Journal of Intelligent Material Systems and Structures*, Vol. 25, No. 8, 2014, pp. 989–1008.

[297] Adhikari, S., "Damping modelling using generalized proportional damping," *Journal of Sound and Vibration*, Vol. 293, No. 1-2, May 2006, pp. 156–170.
★ Among the top 25 most downloaded articles in January - March 2006.

[298] Adhikari, S., "Optimal complex modes and an index of damping non-proportionality," *Mechanical System and Signal Processing*, Vol. 18, No. 1, January 2004, pp. 1–27.

[299] Adhikari, S. and Friswell, M. I., "Authors' reply to 'Comments on Eigenderivative analysis of asymmetric non-conservative systems'," *International Journal of Numerical Methods in Engineering*, Vol. 56, No. 2, 2003, pp. 329–330.

[300] Adhikari, S., "Classical normal modes in non-viscously damped linear systems," *AIAA Journal*, Vol. 39, No. 5, May 2001, pp. 978–980.

[301] Adhikari, S. and Friswell, M. I., "Eigenderivative analysis of asymmetric non-conservative systems," *International Journal for Numerical Methods in Engineering*, Vol. 51, No. 6, June 2001, pp. 709–733.

[302] Adhikari, S., "Calculation of derivative of complex modes using classical normal modes," *Computer and Structures*, Vol. 77, No. 6, August 2000, pp. 625–633.

[303] Friswell, M. I. and Adhikari, S., "Derivatives of complex eigenvectors using Nelson's method," *AIAA Journal*, Vol. 38, No. 12, December 2000, pp. 2355–2357.

[304] Adhikari, S., "Author's Closure: 'Comments on Modal Analysis of Linear Asymmetric Non-conservative Systems' by D. L. Cronin," *ASCE Journal of Engineering Mechanics*, Vol. 126, No. 12, December 2000, pp. 1307–1308.

[305] Adhikari, S., "On symmetrizable systems of second kind," *Transactions of ASME, Journal of Applied Mechanics*, Vol. 67, No. 4, December 2000, pp. 797–802.

[306] Adhikari, S., "Rates of change of eigenvalues and eigenvectors in damped dynamic systems," *AIAA Journal*, Vol. 37, No. 11, November 1999, pp. 1452–1458.
★ **Awarded the John Winbolt Prize, 1999** (best student-paper award from the University of Cambridge for this single-authored paper published independently to the PhD work).

[307] Adhikari, S., "Modal analysis of linear asymmetric non-conservative systems," *ASCE Journal of Engineering Mechanics*, Vol. 125, No. 12, December 1999, pp. 1372–1379.

E.2. Continuous systems

[308] Adhikari, S., "Exact transcendental stiffness matrices of general beam-columns embedded in elastic mediums," *Computers and Structures*, Vol. 255, No. 10, 2021, pp. 106617.

[309] Signh, S. K., Banerjee, A., Verma, R. K., Adhikari, S., and Das, S., "Static and dynamic analysis of homogeneous micropolar-Cosserat panels," *Mechanics of Advanced Materials and Structures*, 2021, in press.

[310] Machado, M. R., Adhikari, S., and Dos-Santos, J. M. C., "Spectral element method for a one-dimensional damaged structure with distributed random properties," *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, Vol. 40, No. 8, 2018, pp. 415:1–16.

[311] Arany, L., Bhattacharya, S., Adhikari, S., Hogan, S. J., and Macdonald, J., "An analytical model to predict the natural frequency of offshore wind turbines on three-spring flexible foundations using two different beam models," *Soil Dynamics and Earthquake Engineering*, Vol. 74, No. 1, 2015, pp. 40–45.

[312] Palmeri, A. and Adhikari, S., "A Galerkin-type state-space approach for transverse vibrations of slender double-beam systems with viscoelastic inner layer," *Journal of Sound and Vibration*, Vol. 330, No. 26, 2011, pp. 6372–6386.

[313] Bhattacharya, S., Adhikari, S., and Alexander, N. A., "A simplified method for unified buckling and dynamic analysis of pile-supported structures in seismically liquefiable soils," *Soil Dynamics and Earthquake Engineering*, Vol. 29, No. 8, August 2009, pp. 1220–1235.

[314] Adhikari, S. and Bhattacharya, S., "Dynamic instability of pile-supported structures in liquefiable soils during earthquakes," *Shock and Vibration*, Vol. 15, No. 6, 2008, pp. 665–685.

[315] Bhattacharya, S., Dash, S. R., and Adhikari, S., "On the mechanics of failure of pile-supported structures in liquefiable deposits during earthquakes," *Current Science*, Vol. 94, No. 5, 2008, pp. 605–611.

[316] Adhikari, S., Lei, Y., and Friswell, M. I., "Modal analysis of non-viscously damped beams," *Transactions of ASME, Journal of Applied Mechanics*, Vol. 74, No. 5, September 2007, pp. 1026–1030.
★ Among the top 10 most downloaded articles in September 2007.

E.3. Nonviscously damped discrete systems

[317] Adhikari, S. and Pascual, B., "Iterative methods for eigenvalues of viscoelastic systems," *Transactions of ASME, Journal of Vibration and Acoustics*, Vol. 133, No. 2, April 2011, pp. 021002:1–7.

[318] Friswell, M. I., Dutt, J. K., Adhikari, S., and Lees, A. W., "Time domain analysis of a viscoelastic rotor using internal variable models," *International Journal of Mechanical Sciences*, Vol. 52, No. 10, 2010, pp. 1319–1324.

[319] Adhikari, S., "A general derivation of dynamic response of viscoelastic structures," *International Journal of Aerospace Innovations*, Vol. 2, No. 1-2, 2010, pp. 29–41.

[320] Adhikari, S., "A reduced second-order approach for linear viscoelastic oscillators," *Transactions of ASME, Journal of Applied Mechanics*, Vol. 77, No. 4, July 2010, pp. 041003:1–8.

[321] Adhikari, S. and Pascual, B., "Eigenvalues of linear viscoelastic systems," *Journal of Sound and*

Vibration, Vol. 325, No. 4-5, September 2009, pp. 1000–1011.

[322] Sieber, J., Wagg, D. J., and Adhikari, S., "On the interaction of exponential non-viscous damping with symmetric nonlinearities," *Journal of Sound and Vibration*, Vol. 314, No. 1-2, 2008, pp. 1–11.

[323] Adhikari, S., "Dynamic response characteristics of a non-viscously damped oscillator," *Transactions of ASME, Journal of Applied Mechanics*, Vol. 75, No. 1, January 2008, pp. 011003:1–12.

[324] Adhikari, S. and Friswell, M. I., "The calculation of eigensolution derivatives for non-viscously damped systems using Nelson's method," *AIAA Journal*, Vol. 44, No. 8, August 2006, pp. 1799–1806.

[325] Adhikari, S., "Qualitative dynamic characteristics of a non-viscously damped oscillator," *Proceedings of the Royal Society of London, Series- A*, Vol. 461, No. 2059, July 2005, pp. 2269–2288.

[326] Adhikari, S. and Wagner, N., "Direct time-domain approach for exponentially damped systems," *Computer and Structures*, Vol. 82, No. 29-30, November 2004, pp. 2453–2461.

[327] Adhikari, S. and Woodhouse, J., "Quantification of non-viscous damping in discrete linear systems," *Journal of Sound and Vibration*, Vol. 260, No. 3, February 2003, pp. 499–518.

[328] Wagner, N. and Adhikari, S., "Symmetric state-space formulation for a class of non-viscously damped systems," *AIAA Journal*, Vol. 41, No. 5, 2003, pp. 951–956.

[329] Adhikari, S. and Wagner, N., "Analysis of asymmetric non-viscously damped linear dynamic systems," *Transactions of ASME, Journal of Applied Mechanics*, Vol. 70, No. 6, December 2003, pp. 885–893.

[330] Adhikari, S., "Dynamics of non-viscously damped linear systems," *ASCE Journal of Engineering Mechanics*, Vol. 128, No. 3, March 2002, pp. 328–339.

[331] Adhikari, S., "Derivative of eigensolutions of non-viscously damped linear systems," *AIAA Journal*, Vol. 40, No. 10, October 2002, pp. 2061–2069.

[332] Adhikari, S., "Eigenrelations for non-viscously damped systems," *AIAA Journal*, Vol. 39, No. 8, August 2001, pp. 1624–1630.

E.4. Nonlocal damped continuous systems

[333] Adhikari, S., Karlicic, D., and Liu, X., "Dynamic stiffness method for nonlocal damped nano-beams on elastic foundation," *European Journal of Mechanics-A/Solids*, Vol. 86, No. 3-4, 2021, pp. 104144.

[334] Karlicic, D., Cajic, M., and Adhikari, S., "Dynamic stability of a nonlinear multiple-nanobeam systems," *Nonlinear Dynamics*, Vol. 93, No. 4, 2018, pp. 1495–1517.

[335] Lei, Y., Murmu, T., Adhikari, S., and Friswell, M. I., "Asymptotic frequencies of various damped nonlocal beams and plates," *Mechanics Research Communication*, Vol. 62, No. 1, 2014, pp. 94–101.

[336] Adhikari, S., Murmu, T., and McCarthy, M., "Frequency domain analysis of nonlocal rods embedded in an elastic medium," *Physica E: Low-dimensional Systems and Nanostructures*, Vol. 59, No. 5, 2014, pp. 33–40.

[337] Lei, Y., Murmu, T., Adhikari, S., and Friswell, M. I., "Dynamic characteristics of damped viscoelastic nonlocal Euler-Bernoulli beams," *European Journal of Mechanics - A/Solids*, Vol. 42, No. 12, 2013, pp. 125–136.
★ This article ranked 2nd among the top 25 most downloaded articles, November-December 2013.

[338] Lei, Y., Friswell, M. I., and Adhikari, S., "Vibration of nonlocal Kelvin-Voigt viscoelastic damped Timoshenko beams," *International Journal of Engineering Science*, Vol. 66-67, No. 1, 2013, pp. 1–13.
★ This article has been marked as a "Highly Cited Paper" by clarivate.com

[339] Adhikari, S., Murmu, T., and McCarthy, M., "Dynamic finite element analysis of axially vibrating nonlocal rods," *Finite Elements in Analysis and Design*, Vol. 63, No. 1, 2013, pp. 42–50.

[340] Friswell, M. I., Adhikari, S., and Lei, Y., "Nonlocal finite element analysis of damped beams," *International Journal of Solids and Structures*, Vol. 44, No. 22-23, November 2007, pp. 7564–7576.

[341] Friswell, M. I., Adhikari, S., and Lei, Y., "Vibration analysis of beams with non-local foundations using the finite element method," *International Journal for Numerical Methods in Engineering*, Vol. 71, No. 11, September 2007, pp. 1365–1386.

[342] Lei, Y., Friswell, M. I., and Adhikari, S., "A Galerkin method for distributed systems with non-local damping," *International Journal of Solids and Structures*, Vol. 43, No. 11-12, 2006, pp. 3381–3400.
★ Among the top 25 most downloaded articles in April - June 2006.

Refereed Conference Papers

2021

[1] Banerjee, A., Adhikari, S., and Hussein, M. I., "Double-peak inertial amplification band-gap by coupling a levered mass with a locally resonant mass," *The International Mechanical Engineering Congress and Exposition (IMECE2021)*, Online, November 2021.

[2] Panda, S., Banerjee, A., Manna, B., and Adhikari, S., "Moving load spectrum over the winkler and pasternak foundation models: A comparative analysis," *The International Mechanical Engineering Congress and Exposition (IMECE2021)*, Online, November 2021.

[3] Chowdhury, S., Banerjee, A., and Adhikari, S., "Vibration mitigation of dynamic systems using inertial amplifier-based isolator with negative stiffness," *The International Mechanical Engineering Congress and Exposition (IMECE2021)*, Online, November 2021.

[4] Cajic, M., Karlicic, D., Paunovic, S., and Adhikari, S., "Fractional damping in a monoatomic chain with cubic nonlinearity," *26th International Congress of Mechanical Engineering (COBEM 2021)*, Florianopolis (online mode)), Brazil, November 2021.

[5] Liu, X., Zhao, X., Adhikari, S., and Liu, X., "The whole frequency range dynamics analysis of built-up structures with domain and boundary uncertainties," *The 8th International Conference on Vibration Engineering (ICVE)*, Shanghai, China, July 2021.

[6] Huang, L., Chang, L., Adhikari, S., and Liu, X., "Broadband dynamic elastic moduli of lattice structures by using the dynamic stiffness method," *The 8th International Conference on Vibration Engineering (ICVE)*, Shanghai, China, July 2021.

[7] Karlicic, D., Cajic, M., and Adhikari, S., "Vibration suppression and energy harvesting application of an axially moving beam," *8th International Congress of Serbian Society of Mechanics (ICSSM)*, Kragujevac, Serbia, June 2021.

[8] Cajic, M., Karlicic, D., and Adhikari, S., "Topological interface states in acoustic metamaterials," *8th International Congress of Serbian Society of Mechanics (ICSSM)*, Kragujevac, Serbia, June 2021.

[9] Adhikari, S., "The role of microstructure uncertainty on broadband homogeneous properties of lattice materials," *8th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2021)*, Athens, Greece (Online mode), June 2021.

[10] Chatterjee, T., Karlicic, D., Adhikari, S., and Friswell, M. I., "Parametric amplification in a stochastic nonlinear piezoelectric energy harvester via machine learning," *IMAC-XXXIV Conference & Exposition on Structural Dynamics*, Online, February 2021.

[11] Adhikari, S., "Dynamic characteristics of 2D lattice metamaterials," *The International Conference on Futuristic Technologies*, Indian Institute of Technology, Delhi, India, January 2021.

2020

[12] Adhikari, S., "Homogeneous dynmaic properties of 2D lattices," *1st Online International Conference on Recent Advances in Computational and Experimental Mechanics (ICRACEM 2020)*, Indian Institute of Technology, Kharagpur, India, September 2020.

[13] Liu, X. and Adhikari, S., "The whole frequency range dynamics of built-up structures with boundary and connectivity uncertainties," *International Conference on Noise and Vibration Engineering (ISMA2020)*, Leuven, Belgium, September 2020.

[14] Adhikari, S., "Random matrix eigenvalue problems in structural dynamics: An iterative approach," *Uncertainty in Structural Dynamics (USD2020)*, Leuven, Belgium, September 2020.

[15] Cajic, M., Karlicic, D., Paunovic, S., and Adhikari, S., "Fractional metadamping in periodic chain with cubic nonlinearity," *Seventh European Nonlinear Oscillations Conferences (ENOC)*, Lyon, France, July 2020.

[16] Karlicic, D., Cajic, M., and Adhikari, S., "Suppression and energy harvesting application of an axially moving beam," *Seventh European Nonlinear Oscillations Conferences (ENOC)*, Lyon, France, July 2020.

[17] Larsen, D., Adhikari, S., and Arora, V., "Stochastic finite element analysis of cantilever beam subjected to fatigue loading," *International Mechanical Engineering Congress & Exposition (IMECE2020)*, Portland, Oregon, USA, November 2020.

[18] Gupta, V., Bhattacharya, B., and Adhikari, S., "Locally resonant mechanical dome metastructures for band-structure estimation," *SPIE Smart Structures, Materials, Nondestructive Evaluation and Health Monitoring Conference*, Anaheim, California, USA, April 2020.

2019

[19] Chatterjee, T., Adhikari, S., and Friswell, M. I., "Stochastic response of assembled systems using concepts of domain decomposition," *17th International Probabilistic Workshop (IPW2019)*, Edinburgh, Scotland, September 2019.

[20] Patrick, J. and Adhikari, S., "Wave propagation in mechanical metamaterial configurations with piezoelectric vibration energy harvestors," *10th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META' 19)*, Lisbon, Portugal, July 2019.

[21] Adhikari, S., Shaw, A., Mukhopadhyay, T., and Lavery, N. P., "Negative in-plane elastic moduli of metallic lattices: Experimental investigations," *10th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META' 19)*, Lisbon, Portugal, July 2019.

[22] Cajic, M., Paunovic, S., Karlicic, D., and Adhikari, S., "Band structure of fractionally damped phononic crystals," *International Congress of Serbian Society of Mechanics*, Sremski Karlovci, Serbia, June 2019.

[23] Adhikari, S., Pryse, S., and Kundu, A., "Stochastic dynamic response analysis of flexible structural systems," *2nd International Conference on Advances in Aerospace Structures, Systems & Technology (AASST 2019)*, London, UK, May 2019.

[24] Grigoriou, A. and Adhikari, S., "Stochastic buckling of composite plates using reduced order methods," *2nd International Conference on Advances in Aerospace Structures, Systems & Technology (AASST 2019)*, London, UK, May 2019.

2018

[25] Adhikari, S. and Friswell, M. I., "A stochastic multidomain approach for mid-frequency vibration problems," *Uncertainty in Structural Dynamics (USD2018)*, Leuven, Belgium, September 2018.

[26] Adhikari, S. and Mukhopadhyay, T., "Dynamics and homogenised elastic properties of irregular cellular metamaterials," *The Thirteenth International Conference on Computational Structures Technology (CST 2018)*, Sitges, Barcelona, Spain, September 2018.

[27] Pryse, E. S., Kundu, A., and Adhikari, S., "Projection methods for stochastic structural dynamics," *14th International Conference on Vibration Engineering and Technology of Machinery (VETOMAC XIV)*, Lisbon, Portugal, September 2018.

[28] Malaji, P., Doddi, S., Friswell, M. I., and Adhikari, S., "Analysis of pendulums coupled by torsional springs for energy harvesting," *14th International Conference on Vibration Engineering and Technology of Machinery (VETOMAC XIV)*, Lisbon, Portugal, September 2018.

[29] Adhikari, S. and Mukhopadhyay, T., "Homogenisation and dynamics of randomly irregular metamaterials," *First International Conference on Mechanics of Advanced Materials and Structures (ICMAMS 2018)*, Turin, Italy, June 2018.

[30] Maneshi, M. A., Ghavanloo, E., Fazelzadeh, S. A., Friswell, M. I., and Adhikari, S., "Semi-analytical solution for postbuckling behavior of highly deformable nanobeams," *The World Congress on Engineering 2018 (WCE 2018)*, London, UK, June 2018.

2017

[31] Madinei, H., Khodaparast, H. H., Shaw, A. D., Friswell, M. I., and Adhikari, S., "Using internal resonance to broaden the operational frequency range of MEMS piezoelectric harvesters," *International Conference on Structural Dynamics (EURODYN)*, Rome, Italy, September 2017.

[32] Jacquelin, E., Dessombz, O., Sinou, J.-J., Adhikari, S., and Friswell, M. I., "Steady-state response

of a random dynamical system described with Pade approximants and random eigenmodes," *International Conference on Structural Dynamics (EURODYN)*, Rome, Italy, September 2017.

[33] Martinez-Ayuso, G., Friswell, M. I., Adhikari, S., Khodaparast, H. H., and Featherston, C. A., "Energy harvesting using porous piezoelectric beam with impacts," *International Conference on Structural Dynamics (EURODYN)*, Rome, Italy, September 2017.

[34] Scarth, C. and Adhikari, S., "Aeroelasticity of finite element composite wing models with spatially-varying material uncertainty," *20th International Conference on Composite Structures (ICCS20)*, Paris, France, September 2017.

[35] Mukhopadhyay, T. and Adhikari, S., "Dynamics of harmonically excited irregular cellular metamaterials," *8th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META' 17)*, Incheon - Seoul, South Korea, July 2017.

[36] Arora, V., Friswell, M. I., and Adhikari, S., "FRF-based probabilistic model updating in structural dynamics for uncertainty identification and quantification," *The 24th International Congress on Sound and Vibration (ICSV 24)*, London, UK, July 2017.

[37] Mukhopadhyay, T. and Adhikari, S., "Dynamics and homogenization of disordered lattice metamaterials," *Second International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2017)*, Rhodes Island, Greece, June 2017.

[38] Madinei, H., Khodaparast, H. H., Adhikari, S., and Friswell, M. I., "Tuning the resonance frequency of a piezoelectric vibration based energy harvester using an electromagnetic force," *6th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2017)*, Rhodes Island, Greece, June 2017.

[39] Batou, A. and Adhikari, S., "Extension of the fixed-point method for the design of general viscoelastic TMDs," *6th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2017)*, Rhodes Island, Greece, June 2017.

[40] Mukhopadhyay, T. and Adhikari, S., "Homogenisation and dynamics of randomly irregular metamaterials," *Second Euro-Mediterranean Conference on Structural Dynamics and Vibroacoustics (Medyna 2017)*, Sevilla, Spain, April 2017.

[41] Boulkaibet, I., Marwalaa, T., Friswell, M. I., Khodaparast, H. H., and Adhikari, S., "Fuzzy finite element model updating using metaheuristic optimization algorithms," *IMAC-XXXV Conference & Exposition on Structural Dynamics*, Orlando, Florida, USA, January 2017.

2016

[42] Dey, S., Mukhopdhyay, T., and Adhikari, S., "A meta-law for functionally graded materials based on low velocity impact parameters," *Fourth International Conference on Advances in Materials and Materials Processing (ICAMMP-IV)*, Kharagpur, India, November 2016.

[43] Khodaparast, H. H., Madinei, H., Friswell, M. I., and Adhikari, S., "Vibration suppression in MEMS devices using electrostatic forces," *International Conference on Noise and Vibration Engineering (ISMA2016)*, Leuven, Belgium, September 2016.

[44] Jacquelin, E., Friswell, M. I., Adhikari, S., Dessombz, O., and Sinou, J.-J., "Polynomial chaos expansion with fuzzy and random uncertainties in dynamical systems," *Uncertainty in Structural Dynamics (USD2016)*, Leuven, Belgium, September 2016.

[45] Martinez-Ayuso, G., Friswell, M. I., Adhikari, S., Khodaparast, H. H., and Berger, H., "Functionally graded porous piezoelectric materials for energy harvesting," *Uncertainty in Structural Dynamics (USD2016)*, Leuven, Belgium, September 2016.

[46] Dey, S., Mukhopdhyay, T., Spickenheuer, A., Gohs, U., and Adhikari, S., "Stochastic natural frequency of composite plates using kriging model," *Sixth International Congress on Computational Mechanics and Simulation (ICCMS2016)*, Mumbai, India, June 2016.

[47] Mukhopadhyay, T. and Adhikari, S., "Mechanics of irregular honeycomb structures," *Sixth International Congress on Computational Mechanics and Simulation (ICCMS2016)*, Mumbai, India, June 2016.

[48] Pryse, E. S. and Adhikari, S., "Dynamic response of stochastic systems using random eigenfunctions: A Galerkin error minimisation approach," *Meccanica Stocastica*, Capri,, Italy, June 2016.

[49] Mukhopadhyay, T. and Adhikari, S., "Wave propagation in irregular honeycombs," *Probabilistic Mechanics Conference (PMC2016)*, Nashville, TN, USA, May 2016.

[50] Arora, V., Friswell, M. I., and Adhikari, S., "FRF-based probabilistic model updating in structural dynamics for uncertainty quantification," *Uncertainties 2016*, Maresias, Brazil, February 2016.

[51] Machado, M. R., Adhikari, S., Dos-Santos, J. M. C., and Arruda, J. R., "Distributed parameter estimation of a stochastic beam structure via sensitivity-based model updating using experimental FRFs," *Uncertainties 2016*, Maresias, Brazil, February 2016.

[52] Madinei, H., Khodaparast, H. H., Friswell, M. I., and Adhikari, S., "A hybrid piezoelectric and electrostatic vibration energy harvester," *SPIE Smart Structures, Materials, Nondestructive Evaluation and Health Monitoring Conference*, Las Vegas, NV, USA, March 2016.

[53] Adhikari, S. and Khodaparast, H. H., "Mass and rotary inertia sensing from vibrating cantilever nanobeams," *SPIE Smart Structures, Materials, Nondestructive Evaluation and Health Monitoring Conference*, Las Vegas, NV, USA, March 2016.

[54] Adhikari, S., "Computational methods for nano-mechanical sensors," *Innovations in Automation and Mechatronics Engineering (ICIAME2016)*, Gujarat, India, February 2016.

[55] Friswell, M. I. and andS. Adhikari, A. C., "An energy measure for mode localization," *IMAC-XXXIV Conference & Exposition on Structural Dynamics*, Orlando, Florida, USA, January 2016.

[56] Madinei, H., Khodaparast, H. H., Friswell, M. I., and Adhikari, S., "A hybrid piezoelectric and electrostatic vibration energy harvester," *IMAC-XXXIV Conference & Exposition on Structural Dynamics*, Orlando, Florida, USA, January 2016.

[57] Boulkaibet, I., Marwalaa, T., Friswell, M. I., and Adhikari, S., "An adaptive Markov chain Monte Carlo method for Bayesian finite element model updating," *IMAC-XXXIV Conference & Exposition on Structural Dynamics*, Orlando, Florida, USA, January 2016.

2015

[58] Malaji, P. V., Ali, S. F., Adhikari, S., and Friswell, M. I., "Analysis of harvesting energy from multiple harvesters with and without coupling," *International Conference on Vibration Problems (ICOVP-2015)*, Guwahati, India, December 2015.

[59] Dey, S., Mukhopdhyay, T., Spickenheuer, A., Gohs, U., and Adhikari, S., "Artificial neural network

based stochastic natural frequency analysis of composite plates," *International Conference on Vibration Problems (ICOVP-2015)*, Guwahati, India, December 2015.

[60] Mukhopdhyay, T., Batou, A., and Adhikari, S., "Stochastic analysis for in-plane elastic moduli of irregular honeycombs with viscoelastic properties," *13th International Probabilistic Workshop 2015 (IPW 2015)*, Liverpool, UK, November 2015.

[61] Adhikari, S., "Computational methods for nanoscale bio-sensors," *Fifth Serbian Congress on Theoretical and Applied Mechanics and Engineering (SSM 2015),*, Belgrade, Serbia, June 2015.

[62] Machado, M. R., Adhikari, S., and Dos-Santos, J. M. C., "Distributed parameter estimation using FRF sensitivity model updating and KL expansion," *The International Conference on Structural Engineering Dynamics (ICEDyn 2015)*, Lagos, Algarve, Portugal, June 2015.

[63] Arora, V., Adhikari, S., and Friswell, M. I., "FRF-based finite element model updating method for non-viscous and non-proportional damped system," *The International Conference on Structural Engineering Dynamics (ICEDyn 2015)*, Lagos, Algarve, Portugal, June 2015.

[64] Mukhopdhyay, T. and Adhikari, S., "Homogenization and ergodicity of random lattices: A physics based approach," *1st International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2015)*, Crete, Grece, May 2015.

[65] Dey, S., Mukhopdhyay, T., Khodaparast, H. H., and Adhikari, S., "Uncertainty quantification of dynamic characteristics of composites: A fuzzy approach," *1st International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2015)*, Crete, Grece, May 2015.

[66] Mukhopdhyay, T. and Adhikari, S., "Free vibration analysis of sandwich panels including the effect of irregularity in honeycomb core," *5th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2015)*, Crete, Grece, May 2015.

[67] Dey, S., Mukhopdhyay, T., Khodaparast, H. H., and Adhikari, S., "Reliability based optimization of composite spherical shells," *23rd Conference of the Association of Computational Mechanics in Engineering (ACME-UK 2015)*, Swansea, UK, April 2015.

[68] Mukhopdhyay, T. and Adhikari, S., "Prediction of equivalent elastic properties of irregular cellular solids," *23rd Conference of the Association of Computational Mechanics in Engineering (ACME-UK 2015)*, Swansea, UK, April 2015.

[69] Dey, S., Mukhopdhyay, T., and Adhikari, S., "Free vibration analysis of angle-ply composite plates with uncertain properties," *AIAA Science and Technology Forum and Exposition 2015 (SciTech2015): 17th AIAA Non-Deterministic Approaches Conference*, Kissimmee, FL, USA, January 2015.

[70] Boulkaibet, I., Mthembua, L., Marwalaa, T., Friswell, M. I., and Adhikari, S., "Finite element model updating using an evolutionary Markov chain Monte Carlo technique"," *IMAC-XXXIII Conference & Exposition on Structural Dynamics*, Orlando, Florida, USA, February 2015.

2014

[71] Chandrashaker, A. and Adhikari, S., "Vibration localisation of rotationally periodic structures," *10th International Conference on Vibration Engineering and Technology of Machinery (VETOMAC-X 2014)*, Manchester, UK, September 2014.

[72] Adhikari, S. and Murmu, T., "Dynamic stiffness and eigenvalues of nonlocal nano-beams," *The Twelfth International Conference on Computational Structures Technology (CST2014)*, Naples, Italy, September 2014.

[73] Dey, S., Mukhopdhyay, T., and Adhikari, S., "Transient response of delaminated torsion stiff composite conical shell panel subjected to low velocity oblique impact," *The Twelfth International Conference on Computational Structures Technology (CST2014)*, Naples, Italy, September 2014.

[74] Kundu, A., DiazDelaO, F. A., Friswell, M. I., and Adhikari, S., "Uncertainty analysis of the dynamic response of a randomly parametrized corrugated skin," *The Twelfth International Conference on Computational Structures Technology (CST2014)*, Naples, Italy, September 2014.

[75] Khodaparast, H. H., Adhikari, S., Link, M., and Friswell, M. I., "Fuzzy model updating and its application to the DLR AIRMOD test structure," *Uncertainty in Structural Dynamics - USD2014*, Leuven, Belgium, September 2014.

[76] Machado, M. R., Santos, J. M. C., and Adhikari, S., "Damage characterisation in structures with random properties," *Uncertainties 2014*, Rouen, France, June 2014.

[77] Adhikari, S. and Khodaparast, H. H., "Spectral methods for fuzzy structural dynamics: Modal vs direct approach," *IUTAM Symposium on Dynamical Analysis of Multibody Systems with Design Uncertainties*, Stuttgart, Germany, June 2014.

[78] Adhikari, S., "The 'damping effect' in the dynamic response of stochastic systems," *Seventh International Conference on Computational Stochastic Mechanics (CSM7)*, Santorini Island, Greece, June 2014.

[79] Clarke, E. and Adhikari, S., "Two is better than one: Weakly coupled nano cantilevers show ultra-sensitivity of mass detection," *Proceedings of the 11th Annual International Workshop on Nanomechanical Sensing (NMC 2014)*, Madrid, Spain, May 2014.

[80] Sheady, Z. and Adhikari, S., "Cantilevered biosensors: Mass and rotary inertia identification," *Proceedings of the 11th Annual International Workshop on Nanomechanical Sensing (NMC 2014)*, Madrid, Spain, May 2014.

[81] Kundu, A., DiazDelaO, F. A., Friswell, M. I., and Adhikari, S., "Uncertainty analysis of corrugated skin with random elastic parameters and surface topology," *AIAA Science and Technology Forum and Exposition 2014 (SciTech2014): 16th AIAA Non-Deterministic Approaches Conference*, National Harbor, Maryland, USA, January 2014.

[82] Boulkaibet, I., Mthembua, L., Marwalaa, T., Friswell, M. I., and Adhikari, S., "Finite element model updating using the separable shadow hybrid Monte Carlo technique," *IMAC-XXXII Conference & Exposition on Structural Dynamics*, Orlando, Florida, USA, February 2014.

[83] Vijayan, K., Khodaparast, H. H., Friswell, M. I., and Adhikari, S., "Energy harvesting in a coupled system using nonlinear impact," *IMAC-XXXII Conference & Exposition on Structural Dynamics*, Orlando, Florida, USA, February 2014.

2013

[84] Adhikari, S., "Mid-frequency structural dynamics using a stochastic multiscale method," *IUTAM Symposium on Multiscale modeling and uncertainty quantification of materials and structures*, Santorini Island, Greece, September 2013.

[85] Karthik, K. S., Adhikari, S. F. A. S., and Friswell, M. I., "Base excited hybrid energy harvesting,"

The 2013 IEEE Multi-Conference on Systems and Control (MSC 2013), Hyderabad, India, August 2013.

[86] Adhikari, S., Gilchrist, D. J. E., Murmu, T., and McCarthy, M. A., "Nonlocal modal analysis for nanoscale dynamical systems," *Fourth International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2013)*, Kos Island, Greece, June 2013.

[87] Adhikari, S., "Uncertainty propagation using random eigenfunction expansion method," *54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Boston, Massachusetts, USA, April 2013.

[88] Adhikari, S., "Uncertainty propagation is structural dynamics: Theory and Applications," *International Symposium on Dynamic Problems of Mechanics (DINAME 2013)*, Rio de Janeiro, Brazil, February 2013.

[89] Chandra, Y., Scarpa, F., and Adhikari, S., "Multiscale methods for graphene based nanocomposites," *Nanocomposites for Aerospace Symposium*, Bristol University, Bristol, UK, February 2013.

[90] Boulkaibet, I., Marwalaa, T., Mthembua, L., Friswell, M. I., and Adhikari, S., "Bayesian finite element model updating using the shadow hybrid Monte Carlo technique," *IMAC-XXXI Conference & Exposition on Structural Dynamics*, Garden Grove, California, USA, February 2013.

2012

[91] Adhikari, S., "A spectral projection approach for fuzzy uncertainty propagation in structural dynamics," *Uncertainty in Structural Dynamics - USD2012*, Leuven, Belgium, September 2012.

[92] DiazDelaO, F. A., Adhikari, S., and Friswell, M. I., "Bayesian assimilation of multi-fidelity stochastic finite element models," *Sixth European Congress on Computational Methods in Applied Sciences And Engineering (ECCOMAS 2012)*, Vienna, Austria, September 2012.

[93] Litak, G., Coccolo, M., Friswell, M. I., Ali, S. F., Adhikari, S., Lees, A. W., and Bilgen, O., "Nonlinear oscillations of an elastic inverted pendulum," *Fourth IEEE International Conference on Nonlinear Science and Complexity*, Budapest, Hungary, August 2012.

[94] Kundu, A. and Adhikari, S., "Transient dynamics of structures with uncertain parameters," *6th International ASRANet Conference*, London, UK, July 2012.

[95] Chowdhury, R. and Adhikari, S., "Fuzzy uncertainty propagation in linear dynamical systems," *6th International ASRANet Conference*, London, UK, July 2012.

[96] Adhikari, S., "A stochastic multiscale approach for mid-frequency vibration problem," *IUTAM Symposium on Multiscale Problems in Stochastic Mechanics*, Karlsruhe, Germany, June 2012.

[97] Adhikari, S., "Perturbation-enhanced extended polynomial-chaos expansion for stochastic finite element problems," *Stochastic Mechanics 2012*, Ustica, Italy, June 2012.

[98] Murmu, T., Adhikari, S., and McCarthy, M., "Dynamic nonlocal finite element method for vibrating carbon nanotubes," *First International Conference on Mechanics of Nano, Micro and Macro Composite Structures*, Torino, Italy, June 2012.

[99] Kundu, A. and Adhikari, S., "Transient dynamics of stochastic systems using a reduced order spec-

tral function approach," *53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, AIAA, Waikiki, Hawaii, USA, April 2012.

[100] Adhikari, S., "Novel reduced Galerkin projection schemes for stochastic dynamical systems," *1st International Symposium on Uncertainty Quantification and Stochastic Modeling (Uncertainties 2012)*, Sao Paulo, Brazil, March 2012.

[101] Papai, F., Adhikari, S., and Wang, B. Y., "Estimation of modal dampings for unmeasured modes," *30th International Modal Analysis Conference (IMAC-XXX)*, Jacksonville, Florida, USA, February 2012.

[102] Boulkaibet, I., Marwalaa, T., Mthembua, L., Friswell, M. I., and Adhikari, S., "Sampling techniques in bayesian finite element model updating," *30th International Modal Analysis Conference (IMAC-XXX)*, Jacksonville, Florida, USA, February 2012.

[103] Kundu, A. and Adhikari, S., "Stochastic structural dynamics using frequency adaptive basis functions," *International Symposium on Engineering under uncertainty: Safety assessment and Management (ISEUSAM- 2012)*, Bengal Engineering and Science University, Shibpur, Howrah, India, January 2012.

2011

[104] Litak, G., Friswell, M. I., Kwuimy, C. K., Adhikari, S., and Borowiec, M., "Energy harvesting by two magnetopiezoelastic oscillators," *Dynamical Systems - Theory and Applications*, Lodz, Poland, December 2011.

[105] Murugan, S., Saavedra-Flores, E. I., Friswell, M. I., and Adhikari, S., "Optimal design of elastomer composites for morphing skins," *Proceedings of the ASME, 2011 Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, Scottsdale, Arizona, USA, September 2011.

[106] Friswell, M. I., Adhikari, S., and Ali, S. F., "Energy harvesting from ambient excitation," *EuroMech Colloquium 530: Structural Control and Energy Harvesting*, Bristol, UK, July 2011.

[107] Potrykus, A., Adhikari, S., and Friswell, M. I., "Magnetopiezoelastic energy harvesting driven by stochastic jump processes," *Seventh European Nonlinear Oscillations Conferences (ENOC)*, Rome, Italy, July 2011.

[108] Adhikari, S. and Kundu, A., "A novel galerkin projection approach for damped stochastic dynamic systems," *Third International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2011)*, Corfu, Greece, May 2011.

[109] Pascual, B. and Adhikari, S., "Hybrid perturbation-polynomial chaos approximate solution to the algebraic random eigenvalue problem," *Third International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2011)*, Corfu, Greece, May 2011.

[110] Adhikari, S., "A reduced spectral projection method for stochastic finite element analysis," *Proceedings of the 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Denver, Colorado, USA, April 2011.

[111] Murugan, S., Chowdhury, R., Adhikari, S., and Friswell, M. I., "Effects of spatially uncertain structural properties on helicopter aeroelastic response predictions using high dimensional model representation," *Proceedings of the 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Denver, Colorado, USA, April 2011.

[112] Ali, S. F., Adhikari, S., and Friswell, M. I., "Analysis of magnetopiezoelastic energy harvesters under random excitations: an equivalent linearization approach," *SPIE Smart Structures, Materials, Nondestructive Evaluation and Health Monitoring Conference*, San Diego, California, USA, March 2011.

[113] Murmu, T. and Adhikari, S., "Nonlocal vibration of coupled double-nanoplate-systems," *International Conference on Composites for 21st Century: Current & Future Trends*, Bangalore, India, January 2011.

2010

[114] Chowdhury, R., Adhikari, S., and Friswell, M. I., "Fuzzy structural dynamics using high dimensional model representation," *Third International Conference on Uncertainty in Structural Dynamics (USD2010)*, Leuven, Belgium, September 2010.

[115] Adhikari, S., "A Vector-Space Approach for Stochastic Finite Element Analysis," *The Tenth International Conference on Computational Structures Technology (CST2010)*, Valencia, Spain, September 2010.

[116] Pascual, B. and Adhikari, S., "Frequency response of stochastic dynamic systems: A modal approach," *The Tenth International Conference on Computational Structures Technology (CST2010)*, Valencia, Spain, September 2010.

[117] Kerfriden, P., Gosselet, P., Adhikari, S., Bordas, S., and Passieux, J. C., "POD-based model order reduction for the simulation of strong nonlinear evolutions in structures: application to damage propagation," *Ninth World Congress on computational Mechanics and 4th Asian Pacific Congress on Computational Mechanics*, Sydney, Australia, July 2010.

[118] Friswell, M. I. and Adhikari, S., "Sensor design for piezoelectric cantilever beam energy harvesters," *International Conference on Recent Advances in Structural Dynamics*, Southampton, UK, July 2010.

[119] Wang, C. Y., Li, C. F., and Adhikari, S., "Effect of cytosol on the dynamic behaviours of microtubules," *TechConnect World Conference and Expo*, Anaheim, California, June 2010.

[120] Adhikari, S., "Uncertainty quantification in structural dynamics: A reduced random matrix approach," *5th International ASRANet Conference*, Edinburgh, Scotland, June 2010.

[121] Chowdhury, R. and Adhikari, S., "A non-linear dimension reduction methodology for the frequency response functions of uncertain structural systems," *5th International ASRANet Conference*, Edinburgh, Scotland, June 2010.

[122] DiazDelaO, F. A. and Adhikari, S., "Bayesian assimilation of multi-fidelity finite element models," *Fourth European Congress on Computational Mechanics (ECCM 2010)*, Paris, France, May 2010.

[123] Pascual, B. and Adhikari, S., "Beyond the stochastic finite element method: Hybrid uncertainty quantification using random PDEs," *Fourth European Congress on Computational Mechanics (ECCM 2010)*, Paris, France, May 2010.

[124] Chowdhury, R. and Adhikari, S., "Collocation based high dimensional model representation for stochastic partial differential equations," *Fourth European Congress on Computational Mechanics (ECCM 2010)*, Paris, France, May 2010.

[125] Ali, S. F. and Adhikari, S., "Control of a class of non-linear stochastic partial differential equa-

tions," *Fourth European Congress on Computational Mechanics (ECCM 2010)*, Paris, France, May 2010.

[126] Scarpa, F., Ruzzene, M., Adhikari, S., and Chowdhury, R., "Wave propagation and structural dynamics in graphene nanoribbons," *SPIE Smart Structures, Materials, Nondestructive Evaluation and Health Monitoring Conference*, San Diego, California, USA, March 2010.

[127] Ali, S. F. and Adhikari, S., "Adaptive backstepping based MR damper monitoring for structural applications," *SPIE Smart Structures, Materials, Nondestructive Evaluation and Health Monitoring Conference*, San Diego, California, USA, March 2010.

[128] Mthembu, L., Marwala, T., Friswell, M. I., and Adhikari, S., "Finite element model selection using particle swarm optimization," *Proceedings of the 28th International Modal Analysis Conference (IMAC - XXVIII)*, Jacksonville, Florida, USA, February 2010.

[129] Chowdhury, R., Adhikari, S., and Scarpa, F., "Electronic properties of graphene nanoribbons coupled with organic molecules," *First Global Congress on NanoEngineering for Medicine and Biology (NEMB2010)*, Houston, TX, USA, February 2010.

2009

[130] DiazDelaO, F. A. and Adhikari, S., "Gaussian process emulators for dynamical systems with random parameters," *Tenth International Conference on Structural Safety and Reliability (ICOSSAR'09)*, Osaka, Japan, September 2009.

[131] Scarpa, F., Adhikari, S., and Wang, C. Y., "Nanocomposites with auxetic nanotubes," *17Th International Conference on Composite Materials (ICCM-17)*, Edinburgh, UK, July 2009.

[132] Adhikari, S. and Pastur, L., "Extremely strong convergence of eigenvalue-density of linear stochastic dynamical systems," *IUTAM Symposium on the Vibration Analysis of Structures with Uncertainties*, St Petersburg, Russia, July 2009.

[133] Chowdhury, R. and Adhikari, S., "MPP-based correlated function expansion for reliabilities and moments of uncertain dynamical system," *2nd International Conference on Uncertainty in Structural Dynamics (USD)*, Sheffield, UK, June 2009.

[134] Adhikari, S., "On the validity of random matrix models in probabilistic structural dynamics," *2nd International Conference on Uncertainty in Structural Dynamics (USD)*, Sheffield, UK, June 2009.

[135] Friswell, M. I. and Adhikari, S., "Structural health monitoring of beam structures using shaped sensors," *IISc Centenary International Conference on Aerospace Engineering and Exhibition (ICEAE 2009)*, Bangalore, India, May 2009.

[136] Adhikari, S. and Oliver, B. P., "A general derivation of dynamic response of viscoelastic structures," *IISc Centenary International Conference on Aerospace Engineering and Exhibition (ICEAE 2009)*, Bangalore, India, May 2009.

[137] Adhikari, S. and Roy Mahapatra, D., "Doubly spectral stochastic finite element method (DSSFEM) for random field problems," *IISc Centenary International Conference on Aerospace Engineering and Exhibition (ICEAE 2009)*, Bangalore, India, May 2009.

[138] Chowdhury, R. and Adhikari, S., "An efficient computational solution scheme of the random eigenvalue problem," *Proceedings of the 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Palm Springs, California, USA, May 2009.

[139] Friswell, M. I. and Adhikari, S., "Structural health monitoring using shaped sensors," *Proceedings of the 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Palm Springs, California, USA, May 2009.

[140] Adhikari, S., "Doubly spectral finite element method for stochastic field problems in structural dynamics," *Proceedings of the 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Palm Springs, California, USA, May 2009.

[141] Li, C. F. and Adhikari, S., "Response statistics of linear stochastic systems: A simultaneous diagonalisation approach," *Proceedings of the 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Palm Springs, California, USA, May 2009.

[142] Adhikari, S., Phani, A. S., and Pape, D. A., "Random eigenvalue problems in structural dynamics: An experimental investigation," *Proceedings of the 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Palm Springs, California, USA, May 2009.

[143] du Bois, J. L., Adhikari, S., and Lieven, N. A. J., "A new approach to model updating in symmetric structures," *Proceedings of the 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Palm Springs, California, USA, May 2009.

[144] Bhattacharya, S., Alexander, N. A., and Adhikari, S., "An approach to study dynamic stability of pile-supported structures in liquefiable soils," *6th International Conference on Urban Earthquake Engineering*, Tokyo, Japan, March 2009.

[145] DiazDelaO, F. A. and Adhikari, S., "Coupling polynomial chaos expansions with Gaussian process emulators: An introduction," *Proceedings of the 27th International Modal Analysis Conference (IMAC - XXVII)*, Orlando, Florida, USA, February 2009.

[146] Mthembu, L., Marwala, T., Friswell, M. I., and Adhikari, S., "Bayesian evidence for finite element model updating," *Proceedings of the 27th International Modal Analysis Conference (IMAC - XXVII)*, Orlando, Florida, USA, February 2009.

[147] du Bois, J. L., Adhikari, S., and Lieven, N. A. J., "On the role of modal coupling in finite element model updating," *Proceedings of the 27th International Modal Analysis Conference (IMAC - XXVII)*, Orlando, Florida, USA, February 2009.

[148] du Bois, J. L., Adhikari, S., and Lieven, N. A. J., "Localisation and curve veering: A different perspective on modal interactions," *Proceedings of the 27th International Modal Analysis Conference (IMAC - XXVII)*, Orlando, Florida, USA, February 2009.

2008

[149] Adhikari, S. and Friswell, M. I., "Shaped modal sensors for uncertain dynamical systems," *IUTAM Symposium on Multi-Functional Material Structures and Systems*, Bangalore, India, December 2008.

[150] DiazDelaO, F. A. and Adhikari, S., "Gaussian process emulator approach for engineering mechanics," *Annual Meeting of Wales Institute of Mathematical and Computational Sciences*, Aberystwyth, UK, December 2008.

[151] Bhattacharya, S., Dash, S. R., Mitra, N., Adhikari, S., and Blakeborough, A., "Investigation of bending-buckling interaction of piles in liquefiable soils," *The 14th World Conference on Earthquake Engineering*, Beijing, China, October 2008.

[152] DiazDelaO, F. A. and Adhikari, S., "Bayesian emulators and the stochastic finite element method," *The Ninth International Conference on Computational Structures Technology*, Athens, Greece, September 2008.

[153] Friswell, M. I. and Adhikari, S., "Shaped sensors for structural health monitoring," *International Conference on Smart Materials, Structures and Systems (ISSS)*, Bangalore, India, July 2008.

[154] Adhikari, S. and Pascual, B., "Response variability of viscoelastically damped systems," *International Conference on Mathematical Problems in Engineering ,Aerospace and Sciences (ICNPAA 2008)*, Genoa, Italy, June 2008.

[155] Adhikari, S., "Wishart random matrices for uncertainty quantification of complex dynamical systems," *International Conference on Mathematical Problems in Engineering ,Aerospace and Sciences (ICNPAA 2008)*, Genoa, Italy, June 2008.

[156] Adhikari, S., "Response variability of linear stochastic systems: A general solution using random matrix theory," *49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, AIAA, Schaumburg, IL, USA, April 2008.

[157] Pascual, B. and Adhikari, S., "Dynamic response of structures with frequency dependent damping models," *49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, AIAA, Schaumburg, IL, USA, April 2008.

[158] Khalil, M., Sarkar, A., and Adhikari, S., "Performance of nonlinear filters for noise-driven chaotic oscillatory systems," *49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, AIAA, Schaumburg, IL, USA, April 2008.

[159] DiazDelaO, F. A. and Adhikari, S., "Bayesian emulator approach for complex dynamical systems," *49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, AIAA, Schaumburg, IL, USA, April 2008.

[160] Pape, D. A. and Adhikari, S., "A statistical analysis of modal parameters for uncertainty quantification in structural dynamics," *Proceedings of the 26th International Modal Analysis Conference (IMAC-XXVI)*, Orlando, Florida, USA, February 2008.

2007

[161] Scarpa, F. and Adhikari, S., "Stochastic modelling of nanostructures: an engineering perspective," *Fourth International Workshop on Functional and Nanostructured Materials*, Gdansk, Poland, September 2007.

[162] Friswell, M. I. and Adhikari, S., "Non-local Models of Stiffness and Damping," *International Conference on Engineering Dynamics*, Carvoeiro, Algarve, Portugal, April 2007.

[163] Adhikari, S. and Tartakovsky, D. M., "Random matrix approach for stochastic flow problems," *6th International Congress on Industrial and Applied Mathematics (ICIAM 2007)*, Zurich, Switzerland, July 2007.

[164] Adhikari, S., "Random matrix theory for stochastic structural dynamics," *6th International Congress on Industrial and Applied Mathematics (ICIAM 2007)*, Zurich, Switzerland, July 2007.

[165] Adhikari, S., "Uncertainty quantification and propagation using matrix variate distributions," *Proceedings of the 1st International Conference on Uncertainty in Structural Dynamics*, University of Sheffield, Sheffield, UK, June 2007.

[166] du Bois, J. L., Adhikari, S., and Lieven, N. A. J., "Adaptive passive control of dynamic response through structural loading," *48th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, AIAA, Waikiki, Hawaii, USA, April 2007.

[167] Adhikari, S., Friswell, M. I., and Lonkar, K., "Uncertainty in structural dynamics: Experimental case studies on beams and plates," *Proceedings of the Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN)*, Crete, Greece, June 2007.

[168] Khalil, M., Sarkar, A., and Adhikari, S., "Parametric identification of non-linear dynamical systems using filtering techniques," *Proceedings of the 1st International Conference on Uncertainty in Structural Dynamics*, University of Sheffield, Sheffield, UK, June 2007.

[169] Adhikari, S., "An unified parametric-nonparametric uncertainty quantification approach for linear dynamical systems," *48th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, AIAA, Waikiki, Hawaii, USA, April 2007.

[170] Adhikari, S., "Uncertainty propagation in linear systems: An exact solution using random matrix theory," *48th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, AIAA, Waikiki, Hawaii, USA, April 2007.

[171] Adhikari, S., "Characterization of uncertainty in damping modeling," *48th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, AIAA, Waikiki, Hawaii, USA, April 2007.

[172] Khalil, M., Sarkar, A., and Adhikari, S., "Linear system identification using proper orthogonal decomposition," *4th Montreal Scientific Computing Days*, Montreal, Canada, April 2007.

[173] Khalil, M., Sarkar, A., and Adhikari, S., "Data assimilation in structural dynamics: extended, ensemble Kalman and particle filters," *4th Montreal Scientific Computing Days*, Montreal, Canada, April 2007.
★ Awarded the **Society for Industrial and Applied Mathematics (SIAM) best poster award**.

[174] Adhikari, S. and Sarkar, A., "The nature of epistemic uncertainty in linear dynamical systems," *Proceedings of the 25th International Modal Analysis Conference (IMAC-XXV)*, Orlando, Florida, USA, February 2007.

[175] du Bois, J. L., Adhikari, S., and Lieven, N. A. J., "An experimental and numerical investigation of mode veerings," *Proceedings of the 25th International Modal Analysis Conference (IMAC-XXV)*, Orlando, Florida, USA, February 2007.

[176] Adhikari, S., Lonkar, K., and Friswell, M. I., "Experimental case studies on uncertainty quantification in structural dynamics," *Proceedings of the 25th International Modal Analysis Conference (IMAC-XXV)*, Orlando, Florida, USA, February 2007.

[177] Bhattacharya, S. and Adhikari, S., "Damping and resonance of piled foundations in liquefiable soils during strong earthquakes," *International Workshop on Earthquake Geotechnical Engineering*, Bengal Engineering and Science University, Howrah, India, January 2007.

[178] Adhikari, S., "Uncertainty quantification and propagation in structural dynamics," *International Conference on Civil Engineering in the New Millennium: Opportunities and Challenges*, Howrah, India, January 2007.

[179] Adhikari, S. and Phani, S. A., "Rayleigh's classical damping revisited," *International Confer-*

ence on Civil Engineering in the New Millennium: Opportunities and Challenges, Howrah, India, January 2007.

2006

[180] Adhikari, S., "A non-parametric approach for uncertainty quantification in elastodynamics," *47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Newport, Rhode Island, USA, May 2006.

[181] Lei, Y., Friswell, M. I., and Adhikari, S., "The analysis of distributed systems with nonlocal damping," *SPIE Smart Structures and Materials Conference*, San Diego, California, USA, February-March 2006.

[182] Wagg, D. J. and Adhikari, S., "On the Dynamics of a Duffing Oscillator with an Exponential Non-Viscous Damping Model," *Proceedings of the Eighth International Conference on Computational Structures Technology*, edited by B. H. V. Topping, G. Montero, and R. Montenegro, Civil-Comp Press, Stirlingshire, United Kingdom, 2006, paper 75.

[183] Khalil, M., Adhikari, S., and Sarkar, A., "Identification of Damping Using Proper Orthogonal Decomposition," *Proceedings of the Eighth International Conference on Computational Structures Technology*, edited by B. H. V. Topping, G. Montero, and R. Montenegro, Civil-Comp Press, Stirlingshire, United Kingdom, 2006, paper 73.

[184] Adhikari, S., "Damping model uncertainty in structural dynamics," *International Conference on Noise and Vibration Engineering (ISMA2006)*, Leuven, Belgium, September 2006.

[185] Lei, Y., Friswell, M. I., and Adhikari, S., "Finite element analysis of beams with nonlocal foundations," *47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Newport, Rhode Island, USA, May 2006.

2005

[186] Adhikari, S., "Damping modelling and identification using generalized proportional damping," *Proceedings of the 23rd International Modal Analysis Conference (IMAC - XXIII)*, Society of Experimental Mechanics (SEM), Orlando, Florida, USA, February 2005.

[187] Friswell, M. I., Coote, J. A., Terrell, M. J., Adhikari, S., Fonseca, J. R., and Lieven, N. A. J., "Experimental Data for Uncertainty Quantification," *Proceedings of the 23rd International Modal Analysis Conference (IMAC - XXIII)*, Society of Experimental Mechanics (SEM), Orlando, Florida, USA, February 2005.

[188] Adhikari, S., "Reliability approximations via asymptotic distribution," *Ninth International Conference on Structural Safety and Reliability (ICOSSAR'05)*, edited by G. Augusti, G. I. Schueller, and M. Ciampoli, Millpress, Rotterdam, Rome, Italy, June 2005, pp. 2127 – 2134.

[189] Adhikari, S., "Joint distribution of eigenvalues of linear stochastic systems," *46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Austin, Texas, USA, April 2005.

[190] Adhikari, S., Lei, Y., and Friswell, M. I., "Dynamics of non-viscously damped distributed parameter systems," *46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Austin, Texas, USA, April 2005.

[191] Adhikari, S., "Random matrix eigenvalue problems in probabilistic structural mechanics," *20th Canadian Congress of Applied Mechanics*, Montreal, Canada, May 2005.

[192] Fonseca, J. R., Friswell, M. I., Mottershead, J. E., Lees, A. W., and Adhikari, S., "Uncertainty quantification using maximum likelihood: experimental validation," *46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Austin, Texas, USA, April 2005.

[193] Adhikari, S., "Stochastic structural analysis using matrix variate distributions," *National Symposium on Structural Dynamics, Random Vibrations and Earthquake Engineering*, edited by C. S. Manohar and D. Roy, Indian Institute of Science, Bangalore, India, July 2005.

2004

[194] Adhikari, S. and Friswell, M. I., "Random eigenvalue problems in structural dynamics," *45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Palm Springs, California, USA, April 2004.

[195] Adhikari, S., "Reliability analysis in high dimensions," *Ninth ASCE EMD/SEI/GI/AD Joint Speciality Conference on Probabilistic Mechanics and Structural Reliability*, Albuquerque, New Mexico, USA, July 2004.

2003

[196] Adhikari, S. and Langley, R. S., "Distribution of eigenvalues of linear stochastic systems," *Proceedings of the ninth International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP 9), San Fransisco, California, USA*, edited by A. Der-Kiureghian, S. Madanat, and J. M. Pestana, Vol. 1 of *Applications of Statistics and Probability in Civil Engineering*, Millpress, Rotterdam, Netherlands, July 2003, pp. 201–207.

2002

[197] Adhikari, S. and Langley, R. S., "Reduction of random variables in structural reliability analysis," *Proceedings of the third International Conference on Mathematical Methods in Reliability Methodology and Practice (MMR 2002)*, edited by H. Langseth and B. Lindqvist, Trondheim, Norway, June 2002, pp. 3–6.

2001

[198] Marwala, T., Adhikari, S., and Heyns, P. S., "Model updating using pseudo-modal-energies," *Proceedings of the 19th International Modal Analysis Conference (IMAC)*, Society of Experimental Mechanics (SEM), Kissimmee, Florida, USA, February 2001, pp. 355–361.

[199] Adhikari, S. and Langley, R. S., "On the nature of random system matrices in structural dynamics," *141st Meeting of the Acoustical Society of America (ASA)*, Chicago, Illinois, USA, June 2001.

[200] Adhikari, S., Woodhouse, J., and Phani, A. S., "Can the spatial distribution of damping be measured?" *141st Meeting of the Acoustical Society of America (ASA)*, Chicago, Illinois, USA, June 2001.
★ Awarded the **Second prize from the Acoustical Society of America for the best student paper/presentation**.

2000

[201] Adhikari, S. and Woodhouse, J., "Towards identification of a general model of damping," *Proceedings of the 18th International Modal Analysis Conference (IMAC)*, Society of Experimental Mechanics (SEM), San Antonio, Texas, USA, February 2000, pp. 377–383.

[202] Adhikari, S., "Complex modes in linear stochastic systems," *Proceedings of the First International Conference on Vibration Engineering and Technology of Machinery (VETOMAC-I)*, edited by K. Venkatraman and C. S. Manohar, Indian Institute of Science, Bangalore, India, October 2000.

1997

[203] Adhikari, S. and Manohar, C. S., "Vibration energy flow in trusses: statistical energy analysis versus stochastic finite element analysis," *7th National Seminar on Aerospace Structures, Recent Advances in Structural Dynamics and Aeroelasticity*, National Aerospace Laboratory (NAL), NAL, Bangalore, India, August 1997.

Book Review

[1] Adhikari, S., "Review of Dynamics of Gambling: Origins of Randomness in Mechanical Systems," *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*, Vol. 225, No. 7, 2011, pp. 1756.

[2] Adhikari, S., "Review of Dynamics of Multibody Systems - Third edition," *The Aeronautical Journal*, Vol. 110, No. 8, June 2006, pp. 395.

Thesis/Reports

[1] Adhikari, S., Scrath, C., and Pryse, S. E., "The Final Report on Robust Aeroelastic Tailoring in the Presence of Combined Uncertainties," Tech. rep., College of Engineering, Swansea University, Swansea, UK, November 2017, (83 pages) prepared for Embraer Inc.

[2] Scrath, C., Pryse, S. E., and Adhikari, S., "Robust Aeroelastic Tailoring in the Presence of Combined Uncertainties: Theoretical Developments and Applications to the Embraer Benchmark Wing Model," Tech. rep., College of Engineering, Swansea University, Swansea, UK, November 2016, (71 pages) prepared for Embraer Inc.

[3] Midtoy, M. R. and Adhikari, S., "Uncertainty Quantification in the Dynamics of Composite Structures: Applications to the Embraer benchmark Wing Model," Tech. rep., College of Engineering, Swansea University, Swansea, UK, June 2016, (96 pages) prepared for Embraer Inc.

[4] Adhikari, S., "Robust Aeroelastic Tailoring in the Presence of Combined Uncertainties," Tech. rep., College of Engineering, Swansea University, Swansea, UK, December 2015, (30 pages) prepared for Embraer Inc.

[5] Dey, S. and Adhikari, S., "Uncertainty Quantification and Model Validation of Dynamics of Composite Plates and Shells," Tech. rep., College of Engineering, Swansea University, Swansea, UK, May 2015, (202 pages) prepared for Embraer Inc.

[6] Adhikari, S., "Uncertainty quantification in the dynamics of H-tail," Tech. rep., College of Engineering, Swansea University, Swansea, UK, November 2013, (72 pages) prepared for Embraer Inc.
★ Results induced and highlighted in research and development strategy documents within Embraer.

[7] Simon, F., Adhikari, S., Bayley, C., Bedford, T., Busby, J., Cliffe, A., Devgun, G., Eid, M., Keshvala, R., Pollard, S., Soane, E., Tracy, D., and Wu, S., "Human Reliability Analysis: A Review and Critique," *Manchester Business School Research Paper No. 589*, 2009.

[8] Adhikari, S., "On the Application of ANOVA method for Wind Energy Predictions," Tech. rep. prepared for Garrad Hassan and Partners (now DNV-GL), Department of Aerospace Engineering, University of Bristol, Bristol, UK, March 2007.

[9] Bhattacharya, S. and Adhikari, S., "Vibrational characteristics of a piled structure in liquefied soil during earthquakes: Experimental Investigation (Part I) and Analytical Modelling (Part II)," Tech. Rep. OUEL 2294/07, Oxford University Engineering Department, Department of Engineering Science, University of Oxford, Oxford, UK, February 2007.

[10] Adhikari, S., "Uncertainty Quantification in the Prediction of Wind Velocities," Tech. rep. prepared for Garrad Hassan and Partners (now DNV-GL), Department of Aerospace Engineering, University of Bristol, Bristol, UK, April 2006.
★ Results utilised in the wind-power prediction software by Garrad Hassan.
★ This work contributed to the award of the Philip Leverhulme Prize 2007.

[11] Adhikari, S. and Langley, R. S., "Reduction of Random Variables in Structural Reliability Analysis," Tech. rep., Cambridge University Engineering Department, Cambridge, UK, February 2002.

[12] Adhikari, S., *Damping Models for Structural Vibration*, Ph.D. thesis, Cambridge University Engineering Department, Cambridge, UK, September 2000.
★ Over 300 citations in Google Scholar.
★ Highest cited Ph.D. thesis in the history of the mechanics division (Division C) of Cambridge University Engineering Department.

[13] Manohar, C. S., Adhikari, S., and Bhattacharyya, S., "Statistical Energy Analysis of Structural Dynamical Systems," Tech. rep., Department of Civil Engineering, Indian Institute of Science, Bangalore, India, August 1999.

[14] Adhikari, S. and Woodhouse, J., "Towards identification of a general model of damping," *Proceedings of SPIE - The International Society for Optical Engineering*, Vol. 4062, 2000, pp. 377–383, Conference Paper, IMAC-XVIII: A Conference on Structural Dynamics 'Computational Challenges in Structural Dynamics'.

[15] Adhikari, S., *Energy Dissipation in Vibrating Structures*, Master's thesis, Cambridge University Engineering Department, Cambridge, UK, May 1998, First Year Report.

[16] Manohar, C. S. and Adhikari, S., "Stochastic Dynamic Stiffness for Vibration Energy Flow Analyses of Skeletal Structures," First annual report submitted to dst, government of india, Department of Civil Engineering, Indian Institute of Science, Bangalore, India, August 1997.

[17] Adhikari, S., *Stochastic Dynamic Stiffness Method for Vibration and Energy Flow Analyses of Skeletal Structures*, Master's thesis, Department of Civil Engineering, Indian Institute of Science, Bangalore, India, July 1997.