Allegato alla domanda di partecipazione
Curriculum formativo, didattico, scientifico e professionale del candidato

Dichiarazione sostitutiva di certificazioni
(Art. 46, D.P.R. 28 dicembre 2000 n. 445)
Dichiarazione sostitutiva dell'atto di notorietà
(da sottoscrivere davanti all'impiegato addetto o da presentare o spedire con la fotocopia di un documento di identità)
(Art. 47, D.P.R. 28 dicembre 2000 n. 445)

Estremi del bando di selezione	D.R. Rep. n. 987/2024 del 24/06/2024
Informazioni aggiornate al	13/02/2025
Nome e Cognome	Dr. Subrat Kumar Jena

Si raccomanda di indicare con precisione tutti gli elementi valutabili ai sensi del bando di selezione (aggiungere o togliere righe secondo necessità).

Esperienza professionale

Periodo	Ente	Principali attività e responsabilità
2022-2023	**Honorary Postdoctoral Fellow (online mode) at NMCAD Lab, Aerospace Engineering, Indian Institute of Science, Bangalore, Karnataka 560012, India**	**Conducting advanced research, Publishing Papers, Collaborations with other researchers.**
2023-2025	**Institute Post-Doctoral Fellow at Department of Applied Mechanics, Indian Institute of Technology Delhi (IIT-D), New Delhi, Delhi 110016, India**	**Conducting advanced research, Publishing Papers, Mentoring & Teaching, Collaborations with other researchers, Presenting research at national and international conferences, Managing research projects, writing reports, Engaging in academic networking, reviewing papers, and participating in scientific communities.**

Istruzione, formazione (es. titoli di studio, certificazioni professionali/linguistiche/informatiche)

Data	Titolo / Principali tematiche	Ente
2016-2022	**Doctor of Philosophy (PhD) at Department of Mathematics, National Institute of Technology Rourkela (NITR) - Rourkela, Odisha 769010, India**	**Graduated with 8.79 CGPA.** **Thesis Title: Dynamical Behaviours of Size Dependant and Functionally Graded Beams via Numerical Solutions**
2013-2015	**Master of Science (MSc) in Mathematics and Scientific Computing at MNNIT Allahabad (NIT Allahabad) - Prayagraj, Uttar Pradesh 211004, India**	**First Class with 7.48 CGPA**
2008-2011	**Bachelor of Science (BSc) in Physics with Mathematics at** **B.J.B Autonomous College - Bhubaneswar, Odisha 751014, India**	**First Class Honours-Distinction with 81.12 %**

Pubblicazioni / Convegni

Pubblicazioni su riviste internazionali:

1. **Jena, S.K.**, Pradyumna, S., Chakraverty, S. and Eltaher, M.A., 2024. Chebyshev-Ritz and Navier's Methods for Hygro-Magneto Vibration of Euler–Bernoulli Nanobeam Resting on Winkler-Pasternak Elastic Foundation. ***ZAMM-Journal of Applied Mathematics and Mechanics/Zeitschrift für Angewandte Mathematik und Mechanik***, *104*(9), p. e202400196.
2. **Jena, S.K.**, Pradyumna, S. and Chakraverty, S., 2024. Quantifying Uncertainty in Free Vibration Characteristics of Nanobeam with One Variable First-order Shear Deformation Theory: An Analytical Investigation. ***Acta Mechanica***, *235*, pp. 4401-4416.
3. **Jena, S.K.**, Pradyumna, S. and Chakraverty, S., 2024. Thermal Vibration of Armchair, Chiral, and Zigzag types of Single Walled Carbon Nanotubes using a Nonlocal Elasticity Theory: An Analytical Approach. ***ZAMM-Journal of Applied Mathematics and Mechanics/Zeitschrift für Angewandte Mathematik und Mechanik***, *104*(4), p. e202301047.
4. **Jena, S.K.**, Chakraverty, S., Mahesh, V. and Harursampath, D., 2022. Wavelet-based Techniques for Hygro-Magneto-Thermo Vibration of Nonlocal Strain Gradient Nanobeam Resting on Winkler-Pasternak Elastic Foundation. ***Engineering Analysis with Boundary Elements***, *140*, pp.494-506.
5. **Jena, S.K.**, Chakraverty, S., Mahesh, V. and Harursampath, D., 2022. Application of Haar Wavelet Discretization and Differential Quadrature Methods for Free vibration of Functionally Graded Micro-beam with Porosity Using Modified Couple Stress Theory. ***Engineering Analysis with Boundary Elements***, *140*, pp.167-185.
6. **Jena, S.K.**, Chakraverty, S., Mahesh, V., Harursampath, D. and Sedighi, H.M., 2022. Free vibration of functionally graded beam embedded in Winkler-Pasternak elastic foundation with geometrical uncertainties using symmetric Gaussian fuzzy number. ***The European Physical Journal Plus***, *137(3), p.399*.
7. **Jena, S.K.**, Chakraverty, S., Mahesh, V., Harursampath, D. and Sedighi, H.M., 2022. A novel numerical approach for the stability of nanobeam exposed to hygro-thermo-magnetic environment embedded in elastic foundation. ***ZAMM-Journal of Applied Mathematics and Mechanics/Zeitschrift für Angewandte Mathematik und Mechanik***, *102*(5), p.e202100380.
8. **Jena, S.K.**, Chakraverty, S., Malikan, M. and Tornabene, F., 2022. Effects of surface energy and surface residual stresses on vibro-thermal analysis of chiral, zigzag, and armchair types of SWCNTs using refined beam theory. ***Mechanics Based Design of Structures and Machines***, *50*(5), pp.1565-1579.
9. **Jena, S.K.**, Chakraverty, S. and Malikan, M., 2021. Application of shifted Chebyshev polynomial-based Rayleigh–Ritz method and Navier's technique for vibration analysis of a functionally graded porous beam embedded in Kerr foundation. ***Engineering with Computers***, 37(4), pp.3569-3589.
10. **Jena, S.K.**, Chakraverty, S. and Malikan, M., 2021. Implementation of non-probabilistic methods for stability analysis of nonlocal beam with structural uncertainties. ***Engineering with Computers***, 37(4), pp.2957-2969.
11. **Jena, S.K.**, Chakraverty, S. and Malikan, M., 2021. Implementation of Haar wavelet, higher order Haar wavelet, and differential quadrature methods on buckling response of strain gradient

nonlocal beam embedded in an elastic medium. ***Engineering with Computers***, 37(2), pp.1251-1264.

12. **Jena, S.K.**, Chakraverty, S., Malikan, M. and Tornabene, F., 2021. Stability analysis of single-walled carbon nanotubes embedded in winkler foundation placed in a thermal environment considering the surface effect using a new refined beam theory. ***Mechanics Based Design of Structures and Machines***, 49(4), pp.581-595.

13. **Jena, S.K.**, Chakraverty, S. and Malikan, M., 2020. Stability analysis of nanobeams in hygrothermal environment based on a nonlocal strain gradient Timoshenko beam model under nonlinear thermal field. ***Journal of Computational Design and Engineering***, *7*(6), pp.685-699.

14. **Jena, S.K.**, Chakraverty, S. and Jena, R.M., 2020. Stability analysis of Timoshenko nanobeam with material uncertainties using a double-parametric form-based analytical approach and Monte Carlo simulation technique. ***The European Physical Journal Plus***, *135*(7), pp.1-19.

15. **Jena, S.K.**, Chakraverty, S. and Malikan, M., 2020. Vibration and buckling characteristics of nonlocal beam placed in a magnetic field embedded in Winkler–Pasternak elastic foundation using a new refined beam theory: an analytical approach. ***The European Physical Journal Plus***, *135(2), pp.1-18*.

16. **Jena, S.K.**, Chakraverty, S., Malikan, M. and Mohammad-Sedighi, H., 2020. Hygro-magnetic vibration of the single-walled carbon nanotube with nonlinear temperature distribution based on a modified beam theory and nonlocal strain gradient model. ***International Journal of Applied Mechanics***, *12*(05), p.2050054.

17. **Jena, S.K.**, Chakraverty, S., Malikan, M. and Sedighi, H., 2020. Implementation of Hermite–Ritz method and Navier's technique for vibration of functionally graded porous nanobeam embedded in Winkler–Pasternak elastic foundation using bi-Helmholtz nonlocal elasticity. ***Journal of Mechanics of Materials and Structures***, *15*(3), pp.405-434.

18. **Jena, S.K.**, Chakraverty, S. and Tornabene, F., 2019. Buckling behavior of nanobeams placed in electromagnetic field using shifted Chebyshev polynomials-based Rayleigh-Ritz method. ***Nanomaterials***, *9*(9), p.1326.

19. **Jena, S.K.** and Chakraverty, S., 2019. Dynamic behavior of an electromagnetic nanobeam using the Haar wavelet method and the higher-order Haar wavelet method. ***The European Physical Journal Plus***, *134*(10), p.538.

20. **Jena, S.K.**, Chakraverty, S. and Jena, R.M., 2019. Propagation of uncertainty in free vibration of Euler–Bernoulli nanobeam. ***Journal of the Brazilian Society of Mechanical Sciences and Engineering***, *41*(10), pp.1-18.

21. **Jena, S.K.**, Chakraverty, S. and Tornabene, F., 2019. Dynamical behavior of nanobeam embedded in constant, linear, parabolic, and sinusoidal types of Winkler elastic foundation using first-order nonlocal strain gradient model. ***Materials Research Express***, *6*(8), p.0850f2.

22. **Jena, S.K.**, Chakraverty, S. and Tornabene, F., 2019. Vibration characteristics of nanobeam with exponentially varying flexural rigidity resting on linearly varying elastic foundation using differential quadrature method. ***Materials Research Express***, *6*(8), p.085051.

23. **Jena, S.K.**, Chakraverty, S., Jena, R.M. and Tornabene, F., 2019. A novel fractional nonlocal model and its application in buckling analysis of Euler-Bernoulli nanobeam. ***Materials Research Express***, *6*(5), p.055016.

24. Chakraverty, S. and **Jena, S.K.**, 2018. Free vibration of single walled carbon nanotube resting on exponentially varying elastic foundation. ***Curved and Layered Structures***, *5*(1), pp.260-272.

25. **Jena, S.K.** and Chakraverty, S., 2018. Free vibration analysis of Euler–Bernoulli nanobeam using differential transform method. ***International Journal of Computational Materials Science and Engineering***, *7*(03), p.1850020.

26. **Jena, S.K.** and Chakraverty, S., 2018. Free Vibration Analysis of Variable Cross-Section Single-Layered Graphene Nano-Ribbons (SLGNRs) Using Differential Quadrature Method. ***Frontiers in Built Environment***, *4*, p.63.

27. **Jena, S.K.** and Chakraverty, S., 2018. Free vibration analysis of single walled carbon nanotube with exponentially varying stiffness. ***Curved and Layered Structures***, *5*(1), pp.201-212.

28. **Jena, S.K.** and Chakraverty, S., 2019. Differential quadrature and differential transformation methods in buckling analysis of nanobeams. ***Curved and Layered Structures***, *6*(1), pp.68-76.

29. **Jena, S.K.** and Chakraverty, S., 2019. Dynamic analysis of single-layered graphene nano-ribbons (SLGNRs) with variable cross-section resting on elastic foundation. ***Curved and Layered Structures***, *6*(1), pp.132-145.

30. Jena, R.M., Chakraverty, S., **Jena, S.K.** and Sedighi, H.M., 2021. On the wave solutions of time-fractional Sawada-Kotera-Ito equation arising in shallow water. ***Mathematical Methods in the Applied Sciences***, *44*(1), pp.583-592.

31. Jena, R.M., Chakraverty, S., Baleanu, D. and **Jena, S.K.**, 2021. Analysis of time-fractional dynamical model of romantic and interpersonal relationships with non-singular kernels: A comparative study. ***Mathematical Methods in the Applied Sciences***, *44*(2), pp.2183-2199.

32. Jena, R.M., Chakraverty, S. and **Jena, S.K.**, 2020. Analysis of the dynamics of phytoplankton nutrient and whooping cough models with nonsingular kernel arising in the biological system. ***Chaos, Solitons & Fractals***, *141*, p.110373.

33. Jena, R.M., Chakraverty, S., **Jena, S.K.** and Sedighi, H.M., 2020. Analysis of time-fractional fuzzy vibration equation of large membranes using double parametric based Residual power series method. ***ZAMM-Journal of Applied Mathematics and Mechanics/Zeitschrift für Angewandte Mathematik und Mechanik***, *101*(4), p.e202000165.

34. Srivastava, H.M., Jena, R.M., Chakraverty, S. and **Jena, S.K.**, 2020. Dynamic response analysis of fractionally-damped generalized Bagley–Torvik equation subject to external loads. ***Russian Journal of Mathematical Physics***, *27*, pp.254-268.

35. Jena, R.M., Chakraverty, S. and **Jena, S.K.**, 2019. Dynamic response analysis of fractionally damped beams subjected to external loads using homotopy analysis method. ***Journal of Applied and Computational Mechanics***, *5*(2), pp.355-366.

Pubblicazioni di Atti di Convegni:

1. **Jena, S.K.**, Chakraverty, S., Ratas, M. and Kirs, M., 2020, November. Application of HOHWM in the stability analysis of nonlocal Euler-Bernoulli beam. **In** ***AIP Conference Proceedings*** (Vol. 2293, No. 1, p. 230003). AIP Publishing LLC.

2. Ratas, M., **Jena, S.K.** and Chakraverty, S., 2020, November. Application of Haar wavelet based methods for solving wave propagation problems. **In** ***AIP Conference Proceedings*** (Vol. 2293, No. 1, p. 230002). AIP Publishing LLC.

Elenco delle presentazioni della conferenza:

1. **Subrat Kumar Jena,** "Analytical and Monte Carlo Simulation Methods for Uncertainty-Driven Stability Analysis Problem," **International Conference on Computations and Data Science (CoDS-2024)**, IIT Roorkee, India during March 08-10, 2024.
2. **Subrat Kumar Jena,** "Boundary Characteristic Orthogonal Polynomials for free Vibration of Euler–Bernoulli Nanobeam exposed to Hygro-Magnetic Environment Embedded in Elastic Foundation," **68th International Conference of the Indian Society of Theoretical and Applied Mechanics (ISTAM)**, NIT Warangal, India during December 07-09, 2023.
3. **Subrat Kumar Jena,** "Shifted Chebyshev Polynomials based Rayleigh-Ritz Method for Hygro-Magneto Vibration of Euler–Bernoulli Nanobeam resting on Winkler-Pasternak Elastic Foundation," **International Conference on Applied Mathematics and Mechanics (ICAMM-2023)**, IIT Indore, India during October 18-20, 2023.
4. **Subrat Kumar Jena,** S. Chakraverty, Mart Ratas, Maarjus Kirs, "Application of HOHWM in the Stability Analysis of Nonlocal Euler-Bernoulli Beam", **17th International Conference of Numerical Analysis and Applied Mathematics (ICNAAM -2019)**, Rhodes, Greece.
5. **Subrat Kumar Jena,** S. Chakraverty, "Stability analysis of nanobeam with uncertain structural parameters", **2nd International Conference on Processing and Characterization of Materials (ICPCM-2019)**, 2019, NIT Rourkela, Odisha, India.
6. **Subrat Kumar Jena,** S. Chakraverty, "Free Vibration Analysis of Non-Homogeneous Single-Walled Carbon Nanotube Resting on Winkler Elastic Foundation", **8th National Conference on Wave Mechanics and Vibrations**, 2018, NIT Rourkela, Odisha, India.

Elenco dei capitoli di libri pubblicati:

1. **Jena, S.K.** and Chakraverty, S., 2018. Solving Fuzzy Static Structural Problems Using Symmetric Group Method. **In** ***Recent Advances in Applications of Computational and Fuzzy Mathematics*** (pp. 95-107). Springer, Singapore.
2. **Jena, S.K.** and Chakraverty, S., 2020. Vibration analysis of nonuniform single-walled carbon nanotube resting on Winkler elastic foundation using DQM. **In** ***Recent trends in wave mechanics and vibrations*** (pp. 371-391). Springer, Singapore.
3. **Jena, S.K.,** Jena, R.M. and Chakraverty, S., 2020. Dynamic behavior of nanobeam using strain gradient model. **In** ***Mathematical Methods in Interdisciplinary Sciences***, pp.239-252.
4. **Jena, S.K.** and Chakraverty, S., 2021. Nanostructural dynamics problems with complicating effects. **In** ***New Paradigms in Computational Modeling and Its Applications*** (pp. 1-9). Academic Press.
5. **Jena, S.K.,** Mundari, R. and Chakraverty, S., 2021. Vibration of microstructural elements. **In** ***New Paradigms in Computational Modeling and Its Applications*** (pp. 35-44). Academic Press.
6. **Jena, S.K.** and Chakraverty, S., 2021. Vibrations of Functionally Graded Structure with material uncertainties. **In** ***Modeling and Computation in Vibration Problems*** (pp. 8.1-8.16). IOP Publishing.
7. **Jena, S.K.** and Chakraverty, S., 2021. Vibration analysis of nanostructural member using Hermite-Ritz method. **In** ***Static and Dynamic Behaviors of Nano Scaled Structural Problems*** (pp. 8.1-8.26). AIP Publishing.

8. **Jena, S.K.** and Chakraverty, S., 2021. Dynamical characteristics of nano structural member with Complicating Effect. **In *Static and Dynamic Behaviors of Nano Scaled Structural Problems*** (pp. 11.1-11.20). AIP Publishing.
9. **Jena, S.K.,** Harursampath, D., Mahesh, V. and Ponnusami, S.A., 2022. Comparing different polynomials-based shape functions in the Rayleigh–Ritz method for investigating dynamical characteristics of nanobeam. ***In Polynomial Paradigms: Trends and applications in science and engineering*** (pp. 8.1-8.16). IOP Publishing.

Elenco dei libri internazionali pubblicati:

1. Chakraverty, S., Jena, R.M. and **Jena, S.K.**, 2020. ***Time-fractional order biological systems with uncertain parameters***. Synthesis Lectures on Mathematics and Statistics, Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-02423-8
2. Chakraverty, S., Jena, R.M. and **Jena, S.K.**, 2022. ***Computational Fractional Dynamical Systems: Fractional Differential Equations and Applications.*** John Wiley & Sons. http://dx.doi.org/10.1002/9781119697060
3. Chakraverty, S., **Jena, S.K.**, 2023. ***Mathematical Methods in Dynamical Systems***. CRC Press: Taylor and Francis Group. https://doi.org/10.1201/9781003328032
4. Chakraverty, S., **Jena, S.K.** and Civalek, O, **Functionally Graded Structures: Modelling and computation of static and dynamical problems**. IOP Publishing. https://doi.org/10.1088/978-0-7503-5301-4
5. **Jena, S.K.** and Chakraverty, S., ***Structural Dynamics in Uncertain Environments: Micro, Nano, and Functionally Graded Beam Analysis***. CRC Press (T&F Group). https://doi.org/10.1201/9781003303107
6. **Jena, S.K.,** Pradyumna, S. and Chakraverty, S., **Advances in Modelling and Analysis of Functionally Graded Micro- and Nanostructures**. IOP Publishing. https://doi.org/10.1088/978-0-7503-6024-1

Altre attività scientifiche:

appartenenze professionali:

1. **Life Member of Indian Society of Theoretical and Applied Mechanics (ISTAM/LM/2024: L/1285)**
2. **Life Member of Indian Mathematical Society (IMS-L/2022/117)**
3. **Life Member of International Association of Engineers (IAENG-324589)**

Ruolo di revisore:

- **IEEE Access**
- **Mathematical Methods in the Applied Sciences**
- **Engineering Research Express**
- **Journal of Applied and Computational Mechanics**
- **Beni-Suef University Journal of Basic and Applied Sciences**
- **Engineering with Computers**
- **Physica Scripta**
- **Mechanics of Advanced Materials and Structures**
- **Metrology and Measurement Systems**
- **Nanotechnology**

- **SIMULATION: Transactions of The Society for Modeling and Simulation International**
- **ZAMM - Journal of Applied Mathematics and Mechanics / Zeitschrift für Angewandte Mathematik und Mechanik**
- **Acta Mechanica**
- **Journal of Vibration and Control**
- **Journal of the Brazilian Society of Mechanical Sciences and Engineering**
- **Zeitschrift für Naturforschung A: A Journal of Physical Sciences**
- **Physics of Fluids**

Ulteriori informazioni pertinenti:
Elenco dei premi e dei risultati ottenuti:

1. Dr. Jena have been awarded the ***Best Paper Award*** in the Oral Presentation category at the International Conference on Applied Mathematics and Mechanics (ICAMM-2023), hosted by Indian Institute of Technology, Indore.
2. He has been honoured with the ***"Mathematics 2022 Best PhD Thesis Award"*** by the Mathematics Journal, Basel, Switzerland, for his outstanding PhD thesis titled "Dynamical Behaviours of Size Dependant and Functionally Graded Beams via Numerical Solutions." This recognition included a prize money of CHF 500 and a certificate.
3. In addition to this achievement, Dr. Jena was awarded the ***IOP Publishing Top Cited Paper Award*** in 2021 and 2022 from India, with his papers among the top 1% most cited in the Materials subject category.
4. His work published in ***ZAMM - Journal of Applied Mathematics and Mechanic*** (Wiley) was recognized as one of the top cited papers for the year 2020-2021.
5. Three of his papers have been recognized as the ***Best-Cited Papers*** published in Curved and Layered Structures Journal (De Gruyter).

Luogo, data e firma

Cagliari, 13.02.2025