



Professor Subrata Kumar Panda

See:

http://www.ismdhanbad.ac.in/cv/cv_saratpanda.pdf

<https://scholar.google.com/citations?user=UzqsYNcAAAAJ&hl=en>

<http://nitrkl.ac.in/Academic/1Department/FacultyProfile.aspx?weryunmbhjt=MTM%3D-cWMbmsYIWAQ%3D&fbvdhghghj=MTgz-De3VpQhmdfo%3D>

Department of Mechanical Engineering
National Institute of Technology Rourkela

Partial Biography:

Like every research aspirant in the first decade of the 21st century, Prof. S.K Panda got to do his Ph.D. from IIT Kharagpur. “Nonlinear Vibration Analysis of Thermally Post-Buckled Composite Shell Panels with and without Shape Memory Alloy Fibres”, the thesis is about reducing the destructive nature of materials when they face extreme environment changes. A phenomenon like buckling was sought to curb and the materials longevity was increased with the technique of fabrication by introducing foreign materials, in the process making enduring composites. Materials like SME can actuate minor changes as well as changes up to 10-degree C and are the materials of the future believes Prof. Panda. After completing his student life, he moved on to the teaching arena. He served as a professor in CV Raman College of Engineering and in KIIT University, an experience amounting to 4 years. Being a curious research mind, he did a project in KIIT University. The project was about “Numerical Analysis” which includes comparing the mechanical behaviour of materials like buckling, post-buckling, vibration and bending of functionally graded and laminated structures. The project was backed by AICT. The field of functionally graded materials is a less trodden one and from the practical point of view, scholars have worked only in layers. There is a lot of scope in this field as lacunae of composites such as debonding due to high temperatures and there is a huge part of the subject left uncovered.

Education:

2009 Ph.D Indian Institute of Technology Kharagpur

Thesis: “Static and dynamic instability analysis of plates and cylindrical panels using third order theory”

2003 M. Tech Indian Institute of Technology Madras

2000 U.C.E. Burla (Govt.)

Selected Publications:

Panda S, Ray MC (2006). Nonlinear analysis of smart functionally graded plates integrated with a layer of piezoelectric fiber reinforced composite. *Smart Mater. Struct.* 15: 1595-1604

S. K. Panda, B. N. Singh, 'Nonlinear free vibration of spherical shell panel using higher order shear deformation theory – a finite element approach' *Int. J. Press. Vessels Pip.* 86 6 (2009): 373-383

S.K. Panda and B.N. Singh (Department of Aerospace Engineering, Indian Institute of Technology Kharagpur, Kharagpur 721 302, India), “Thermal post-buckling behaviour of laminated composite cylindrical/hyperboloid shallow shell panel using nonlinear finite element method”, *Composite Structures*, Vol. 91, No. 3, December 2009, pp. 366-374, doi:10.1016/j.compstruct.2009.06.004

Panda S.K, Ramachandra L.S. Buckling of rectangular plates with various boundary conditions loaded by non-uniform in-plane loads. *International Journal of Mechanical sciences*, Volume 52, Issue 6, June 2010, Pages 819-828.

S K Panda, B N Singh (Department of Aerospace Engineering, Indian Institute of Technology Campus, Kharagpur, West Bengal, India), “Thermal post-buckling analysis of a laminated composite spherical shell panel embedded with shape memory alloy fibres using non-linear finite element method”, *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*, Vol. 224, No. 4, 2010, pp. 757-769, doi: 10.1243/09544062JMES1809

S.K. Panda and B.N. Singh (Department of Aerospace Engineering, Indian Institute of Technology Kharagpur, Kharagpur 721 302, India), “Nonlinear free vibration analysis of thermally post-buckled composite spherical shell panel”, *International Journal of Mechanics and Materials in Design*, Vol. 6, No. 2, 2010, pp. 175-188, doi: 10.1007/s10999-010-9127-1

Sarat Kumar Panda and L.S. Ramachandra (Department of Civil Engineering, Indian Institute of Technology, Kharagpur 721302, India), “Postbuckling analysis of cross-ply laminated cylindrical shell panels under parabolic mechanical edge loading”, *Thin-Walled Structures*, Vol. 48, No. 8, August 2010, pp. 660-667, doi:10.1016/j.tws.2010.04.010

Panda S.K, Ramachandra L.S. Buckling and postbuckling behavior of cross-ply composite plate subjected to non-uniform in-plane loads. *Journal of Engineering Mechanics (ASCE)*. Volume 137, Issue 9, September 2011, Pages 589-597

Ramachandra L.S, Panda S.K., Dynamic Instability of Composite plates subjected to non-uniform in-plane loads. *Journal of Sound and Vibration*. Volume 331, Issue 1, Jan 2011, Pages 53-65.

Panda S.K, Ramachandra L.S. Dynamic Instability of cylindrical shell panels subjected to non-uniform in-plane

loads. *International Journal of Applied Mechanics and Engineering*. Volume 0, Issue 1, Sept 2011, Pages 1-24.

S.K. Panda , B.N. Singh, Large amplitude free vibration analysis of thermally post-buckled composite doubly curved panel using nonlinear FEM, *Finite Elements in Analysis and Design*, 47(4), 2011, 378- 386.

S.K. Panda (1) and B.N. Singh (2)

(1) Dept. of Mechanical Engineering, NIT Rourkela, Odisha, India

(2) Dept. of Aerospace Engineering, IIT Kharagpur, West Bengal, India

“Thermal postbuckling behavior of laminated composite spherical shell panel using NFEM”, *Mechanics Based Design of Structures and Machines*, Vol. 41, pp. 468-488, 2013, DOI: 10.1080/15397734.2013.797330

Sharma Ashu, Panda S.K. Dynamic instability of radially functionally graded circular column with different end conditions. *ACTA Mechanica*, 2012 (ACCEPTED)

V.R. Kar and S.K. Panda (Dept. of Mechanical Engg., NIT, Rourkela,769008), “Thermal buckling of temperature dependent functionally graded cylindrical panel”, 5th International & 26th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2014) December 12th–14th, 2014, IIT Guwahati, Assam, India