



Professor Suraj Prakash Harsha

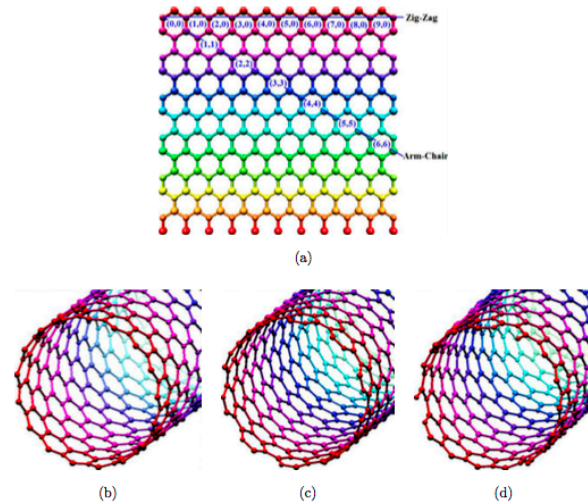


Fig. 1. (a) Plane h-BN sheet with possible wrapping and the corresponding (n, m) indices for zigzag and armchair forms. Structural models of three types of SWBNNTs made of a wrapped h-BN layer: (b) zigzag, (c) armchair and (d) chiral.

From: Mitesh B. Panchal, S.H. Upadhyay and S.P. Harsha, "An efficient finite element model for analysis of single walled boron nitride nanotube-based resonant nanomechanical sensors", NANO: Brief Reports and Reviews, Vol. 8, No. 1, 1350011, 2013

See:

<https://www.iitr.ac.in/~ME/surajfme>

https://scholar.google.com/citations?user=dM_9ghIAAAAJ&hl=en

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Areas of Interest:

Vibrations & Control, Machine & Human Vibration, CNT Based Nano-resonators, Fault Diagnosis/Prognosis of Bearings

Selected Publications:

Joshi, A.Y., Bhatnagar, A., Harsha, S.P., Sharma, S.C.: Vibration response analysis of Doubly clamped single walled wavy carbon nanotube based nanomechanical sensors. *J. Nanotechnol. Eng. Med.* 1(3), 93-1000 (2010)

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S. C. Gajbhiye, S.H. Upadhyay and S.P. Harsha (2012), "Free Vibration Analysis of flat thin membrane", *International Journal of Engineering Research & Technology (IJEST)* 4 (2012).

S. C. Gajbhiye, S.H. Upadhyay and S.P. Harsha (2012), "Geometric non-linear analysis of thin flat membrane", *International Journal of Engineering Research & Technology (IJERT)* 1 (2012).

Mitesh B. Panchal, S.H. Upadhyay and S.P. Harsha, "An efficient finite element model for analysis of single walled boron nitride nanotube-based resonant nanomechanical sensors", *NANO: Brief Reports and Reviews*, Vol. 8, No. 1, 1350011, 2013

Panchal, M.B., Upadhyay, S., Harsha, S.: Vibrational characteristics of defective single walled BN nanotube based nanomechanical mass sensors: single atom vacancies and divacancies. *Sens. Actuators A: Phys.* 197,

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S. C. Gajbhiye, S. H. Upadhyay, and S. P. Harsha. "Vibration Analysis of an Inflatable Torus Based on Mode Shape", *AIAA Journal*, Vol. 51, No. 6 (2013), pp. 1526-1532.

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A.K. Gupta and S.P. Harsha, "Analysis of mechanical properties of carbon nanotube reinforced polymer composites using continuum mechanics approach", *Procedia Materials Science*, Vol. 6, pp 18-25, 2014

S.J. Singh and S.P. Harsha, "Static analysis of functionally graded plate using nonlinear classical plate theory with von-Karman strains", *International Journal of Applied Mechanics and Engineering*, Vol. 23, No. 3, pp 707-726, 2018

S.J. Singh and S.P. Harsha, "Exact solution for free vibration and buckling of sandwich S-FGM plates on Pasternak elastic foundation with various boundary conditions", *International Journal of Structural Stability and Dynamics*, Vol. 19, No. 3, 1950028, March 2019

S.J. Singh and S.P. Harsha, "Nonlinear dynamic analysis of sandwich S-FGM plate resting on Pasternak foundation under thermal environment", *European Journal of Mechanics - A/Solids*, Vol. 76, pp 155-179, July-August 2019