



भारत सरकार / Government of India
परमाणु ऊर्जा विभाग / Department of Atomic Energy
होमी भाभा राष्ट्रीय संस्थान / Homi Bhabha National Institute
राजा रामन्ना प्रगत प्रौद्योगिकी केन्द्र
Raja Ramanna Centre for Advanced Technology



HBNI Faculty Profile

Name	<i>Mukesh P Joshi</i>	
Designation	<i>Professor</i>	
Research Area	<i>Photonic Nanomaterials, NanoScience, Device Physics</i>	
Research Profile	<p>Prof. Mukesh P. Joshi obtained M. Sc. and Ph. D.(Physics) from IIT Bombay. At RRCAT he developed methods of fabricating thin films and nanostructures using lasers and other conventional methods for energy conversion and storage applications, photodiodes, NLO devices etc. He also spent two years at University of Buffalo NY, USA and carried out research on laser ablation, 3D data storage and microfabrication. Presently pursuing femtosecond laser based fabrication of nanomaterials, surface and bulk microstructures in glass, crystals, polymers etc. for various photonic device applications. He also has several years of teaching experience in Laser Physics and NLO subject area.</p>	
Ten Selected Recent Publications		
1.	"On red – shift of UV photoluminescence with decreasing size of silicon nanoparticles embedded in SiO ₂ matrix grown by pulsed laser deposition", Amita Chaturvedi, M.P. Joshi, Ekta Rani, Alka Ingale, A.K. Srivastava, L.M. Kukreja, J. Lumin. 154 (2014) 178–184.	
2.	"X-ray absorption spectroscopy based investigation of local structure in yttria stabilized zirconia nanoparticles generated by laser evaporation method: Effect of pulsed vs CW mode of laser operation" , J. Khare, P. Rajput, M.P. Joshi, S.N. Jha, D. Bhattacharyya, L.M. Kukreja, Ceramics International 41 (2015) 5909–5915.	
3.	"Valance Band Offset Studies Of TiO ₂ /MDMO PPV and TiO ₂ /PEDOT PSS Hetero-structures Using Photoelectron Spectroscopy", R. S. Ajimsha, M. P. Joshi, S. Raj Mohan, Amit. K. Das, L. M. Kukreja, D. M. Phase, RSC Adv. 5(2015)97891.	
4.	"Growth of Anatase and Rutile Phase TiO ₂ Nanoparticles using Pulsed Laser Ablation in Liquid: Influence of Surfactant Addition and Ablation Time Variation" Amita Chaturvedi, M. P. Joshi, P. Mondal, A.K. Sinha, A. K. Srivastava, Appl. Surf. Sci. 396 (2017) 303-309.	
5.	"Charge transport in thin films of MDMO PPV dispersed with lead sulfide nanoparticles, S Raj Mohan, M. P. Joshi, T. S. Dhami, V. Awasthi, C. Shalu, B. Singh, V.	



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	Singh, Synthetic Metals, 224 (2017) 80.
6.	"All Organic near Ultraviolet Photodetectors based on Bulk Hetero-Junction of P3HT and DH6T", Shalu C., Nidhi Yadav, Kshitij Bhargava, Mukesh P. Joshi , Vipul Singh, Semicond. Sci. Technol. 33, 095021 (2018).
7.	"A Model for Charge Transport in Semicrystalline Polymer Thin Films", S. Raj Mohan, Manoranjan P. Singh, M. P. Joshi, J. Polym. Sci. B: Polym. Phys. 57, 137-141 (2019)
8.	"Development of Soft X-ray Excited Optical Luminescence (XEOL) Measurement Setup at Beamline 4 in Indus-1 Synchrotron Radiation Source", Ravi S. Verma, Praveen K. Yadav, Mukesh P. Joshi, AIP Conference Proceedings 2265, 030215 (2020).
9.	"Influence of precursor solution temperature on the crystalline nature of mixed halide perovskite thin films grown by one-step deposition method", S. Raj Mohan, M. P. Joshi, T. S. Dhami, S. K. Rai, R. Singh, Journal of Materials Science: Materials in Electronics volume 32, pages2459–2470(2021).
10.	"Visible light sensitive Au-TiO ₂ nanocomposites formed by effective attachment of Au onto TiO ₂ nanoparticles using liquid phase pulsed laser ablation method", Amita Chaturvedi, Mukesh P Joshi, Puspen Mondal, A. K. Sinha, Optical Materials, 138, 113732 (2023).