




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

<b>Name</b>	<i>Dr. Sudhir Kumar Dixit</i>	
<b>Designation</b>	<i>Senior Professor</i>	
<b>Research Area</b>	<i>Laser Technology Development and Applications</i>	
<b>Research Profile</b>	<p><i>Dr. Dixit is leading a research group in the area of Laser Technology Development and its Applications. He has about 35 years of experience in the development of gas, liquid and solid-state laser systems. He has worked extensively on the beam quality improvement of laser systems, non-linear optics, high-resolution photoionization spectroscopy, fiber grating sensors, and laser-based sensors. He led a team that established facility to fabricate optical fiber sensors in RRCAT. Dr. Dixit has guided the research works of a large number of Ph.D. students from HBNI in capacity as a guide or chairman of Doctoral committees. He has visited many laser and accelerator laboratories worldwide as a part of scientific interactions. He has to his credit about 225 publications in Journals/conferences. Dr. Dixit is currently playing a leading role in Incubation/Technology transfer of in house developed laser related technologies to industries and academia in the country.</i></p>	
<b>Ten Selected Recent Publications</b>		
1.	Yadav S., Paul C.P., Rai A.K., Singh R., <b>Dixit S.K.</b> , Elucidating laser directed energy deposition based additive manufacturing of copper-stainless steel functionally graded material: Processing and material behaviour, Journal of Manufacturing Processes, 92, 107-123, 2023	
2.	Gupta P.K., Singh C.P., Mukhopadhyay P.K., <b>Dixit S.K.</b> , Bindra K.S., Vector dark-bright pulses from a ytterbium doped fiber laser mode-locked by nonlinear multimode interference, Laser Physics, 33, 045105, 2023	



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3.	Saxena M.K., Sharma R.K., Kumar S., Kishore J., Nathwani R.K., Gupta A.M., Kumar A., Kumar A., Bhatnagar V.K., Prakash O., <b>Dixit S.K.</b> Studies on thermal profile measurement and fire detection in a power supply cable of a synchrotron radiation source by Raman optical fiber distributed temperature sensor system, Optical Fiber Technology, 73, 103020, 2022
4.	Mahakud R., Kumar J., Kumar S., Prakash O., <b>Dixit S.K.</b> , Nakhe S.V. Fabrication and analysis of enhanced thermal stability and high-sensitivity turnaround point long-period fiber grating, Applied Optics, 61, 1068, 2022
5.	Kumar J., Mahakud R., Kumar S., Saini P.K., Prakash O., <b>Dixit S.K.</b> , Nakhe S.V., Analysis and experiment on simultaneous measurement of strain and temperature by etched and un-etched FBG pair, Results in Optics, 5, 100135, 2021
6.	Saini P.K., Prakash O., Kumar J., Purbia G.S., Mukharjee C., <b>Dixit S.K.</b> , Nakhe S.V., Relative humidity measurement sensor based on polyvinyl alcohol coated tilted fiber Bragg grating, Measurement Science and Technology, 32, 125123, 2021
7.	Kumar J., Singh G., Saxena M.K., Prakash O., <b>Dixit S.K.</b> , Nakhe S.V., Development and Studies on FBG Temperature Sensor for Applications in Nuclear Fuel Cycle Facilities, IEEE Sensors Journal, 21, 7613-7619, 2021
8.	Mahakud R., Kumar J., Prakash O., <b>Dixit S.K.</b> , Temperature dependence of temperature sensitivity of resonant mode of a long period fiber grating, Applied Physics B, 126, 90, 2020
9.	Saini P.K., Kumar S., Kumar J., Purbia G.S., Prakash O., <b>Dixit S.K.</b> , Graphene-oxide-coated fiber Bragg grating sensor for ethanol detection in petrol, Measurement Science and Technology, 31, 025109, 2020
10.	Saini V.K., Talwar S., Subrahmanyam V.V., Mishra R.K., Saini P.K., <b>Dixit S.K.</b> , Laser isotope separation scheme of lithium by three-color photoionization, Physica Scripta, 95, 075403, 2020