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	*Dr. Vibhuti Bhushan Tiwari*	
Designation	*Professor*	
Research Area	*Laser atom cooling, Cold atom Physics, Quantum Optics, Laser frequency stabilization, High resolution spectroscopy*	
Research Profile	*Dr. V. B. Tiwari joined RRCAT in September 1998 as SO/C after completion of orientation courses from 41st batch of BARC Training School at BARC. He completed his Ph D degree in year 2010 in the field of laser cooling of Rb atoms. Dr. Tiwari has worked as a senior post-doctoral fellow at Tyndall National Institute and University College Cork (UCC), Cork, Ireland during 2011-12. At RRCAT, Dr. Tiwari has* significantly contributed *in the work on cold noble gas Kr atoms and trapping of Rb atoms on an atom-chip.* He is presently involved in the development of a cold atom interferometry setup for precision measurement of gravitational acceleration.	

Ten Selected Recent Publications

1.	"Cooling of fermionic ^{83}Kr-bosonic ^{84}Kr isotopes in a magneto-optical trap"S. Singh, **V. B. Tiwari**, S. R. Mishra, Pramana - J. Phys., 93:92 (2019).
2.	"On electromagnetically induced transparency in N-systems in cold ^{87}Rb atoms", C. Mishra, A. Chakraborty, S. P. Ram, S. Singh, **V. B. Tiwari**, S. R. Mishra, J. Phys. B: At. Mol. Opt. Phys., 53, 015001 (2020)
3.	"On continuous loading of a U-magneto-optical trap (U-MOT) on atom-chip in ultra high vacuum" V. Singh, **V. B. Tiwari**,, S. R. Mishra, Laser Phys. Lett., 17, 035501 (2020).
4.	"Absorption imaging of trapped atoms in presence of AC-Stark shift", K. Bhardwaj , S.P. Ram, S. Singh, **V. B. Tiwari,** S.R. Mishra, Phys. Scr. 96, 015405, (2021).
5.	"Polarization enhanced tunable Doppler-free dichroic lock technique for laser frequency locking", V. Singh, **V. B. Tiwari,** S.R. Mishra, J. Opt. Soc. Am B, 38, 249, (2021).

6.	"A single laser operated magneto-optical trap for Rb atomic fountain" S. Singh, B. Jain, S. P. Ram, **V. B. Tiwari**, S. R. Mishra, Pramana - J. Phys., 95, 67, (2021).
7.	"Different atom trapping geometries with time averaged adiabatic potentials" S. Sarkar, S. P. Ram, **V. B. Tiwari**, S. R. Mishra, Eur. Phys. J. D, 75, 281, (2021).
8.	"Efficient quantum state preparation using Stern–Gerlach effect on cold atoms", V. Singh, **V. B. Tiwari,** S.R. Mishra, Meas. Sci. Technol., 33, 095019, (2022).
9.	"A method for loading magneto-optical trap in an ultrahigh vacuum environment", K. Bhardwaj, S. Sarkar, S. P. Ram, **V. B. Tiwari,** S.R. Mishra, AIP Advances, 13, 015108, (2023).
10.	"Development and characterization of atom chip for magnetic trapping of atoms", V. Singh, **V. B. Tiwari,** A. Chaudhary, R. Shukla, C. Mukherjee, S.R. Mishra, ***J. Appl. Phys.***, 133, 084402, (2023).