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. M. K. Chattopadhyay*	
Designation	*Associate Professor*	
Research Area	*Study of thermal, electrical, magnetic and optical properties of magnetic and superconducting materials*	
Research Profile	*Completed Doctoral program in 1999 from the Cryogenic Engineering Centre, IIT Kharagpur, and joined RRCAT as Dr. K. S. Krishnan Research Associate in 2000 and subsequently as a Scientific Officer in 2001. Presently heading the Free Electron Laser Utilization Laboratory. Research interest lies in the experimental investigation of magnetic and superconducting materials with potential for technological applications, especially multifunctional properties associated with magneto-structural phase transitions, and interplay of magnetism and superconductivity in alloy superconductors. Published more than 125 research articles in refereed journals, received Scientific & Technical Excellence Award in 2009 and Group Achievement Award in 2017 from DAE, India.*	

Ten Selected Recent Publications

1.	Effect of Gd addition on the superconducting properties of Ti-based V, Nb, Ta alloy, SK. Ramjan, L. S. Sharath Chandra, Rashmi Singh, M. K. Chattopadhyay, Superconductivity 6 (2023) 100048.
2.	Grain refinement and enhancement of critical current density in the $V_{0.60}Ti_{0.40}$ alloy superconductor with Gd addition, Sabyasachi Paul, SK. Ramjan, R. Venkatesh, L. S. Sharath Chandra and M. K. Chattopadhyay, IEEE Trans. Appl. Supercond. 31 (2021) 8000104.
3.	Renormalization of electron-phonon coupling in the Mott-Ioffe-Regel limit due to point defects in the $V_{1-x}Ti_x$ alloy superconductors, Sabyasachi Paul, L. S. Sharath Chandra and M K Chattopadhyay, J. Phys.: Condens. Matter 31 (2019) 475801.
4.	Study of the dynamical features of the austenite-martensite phase transition in the $Ni_{50}(Mn, 1\%Fe)_{34}In_{16}$ alloy using scanning Hall probe imaging, M. K. Chattopadhyay, K. Morrison, A. Dupas, V. K. Sharma, L. S. Sharath Chandra, L. F. Cohen and S. B.

	Roy, J. Appl. Phys. 111 (2012) 053908.
5.	Combined effect of hydrostatic pressure and magnetic field on the martensitic transition in the $Ni_{49}CuMn_{34}In_{16}$ allo, M. K. Chattopadhyay, V. K. Sharma, Anil Chouhan, Parul Arora and S. B. Roy, Phys. Rev. B 84 (2011) 064417.
6.	Kinetic arrest of the first-order ferromagnetic-to-antiferromagnetic transition in $Ce(Fe_{0.96}Ru_{0.04})_2$: Formation of a magnetic glass, M. K. Chattopadhyay, S. B. Roy and P. Chadda, Phys. Rev. B 72 (2005) 180401(R).
7.	Supercooling and giant relaxation of disordered vortex state in a doped $CeRu_2$ alloy, M. K. Chattopadhyay, S. B. Roy and P. Chadda, Phys. Rev. B 71 (2005) 024523.
8.	Metastable magnetic response across the antiferromagnetic to ferromagnetic transition in Gd_5Ge_4, M. K. Chattopadhyay, M. A. Manekar, A. O. Pecharsky, V. K. Pecharsky, K.A. Gschneidner Jr., J. Moore, G. K. Perkins, Y. V. Bugoslavsky, S. B. Roy, P.Chaddah and L. F. Cohen, Phys. Rev. B 70 (2004) 214421.
9.	Metastability and giant relaxation across the ferromagnetic to antiferromagnetic transition in $Ce(Fe_{0.96}Ru_{0.04})_2$, M. K. Chattopadhyay, S. B. Roy, A. K. Nigam, K. J. S. Sokhey and P. Chaddah, Phys. Rev. B 68 (2003) 174404.
10.	Magnetic response of $Fe_{1-x}Co_xSi$ alloys: a detailed study of magnetization and magnetoresistance, M. K. Chattopadhyay, S. B. Roy, Sujeet Chaudhary, Kanwal Jeet Singh and A. K. Niga, Phys. Rev. B 66 (2002) 174421.