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. Raktim Dasgupta*	
Designation	*Associate Professor*	
Research Area	*Optical trapping of biological cells, Holographic optical traps, Single cell Raman spectroscopy, Membrane biophysics, Epidemic modelling*	
Research Profile	*Investigation of biological systems using laser traps and spectroscopic techniques for disease diagnosis applications and understanding the mechanism of stress response. Modelling of infectious diseases dynamics, epidemic outbreak and effectiveness of control strategies.*	

Ten Selected Recent Publications

1.	*Y. Singh, A. Chowdhury, R. Dasgupta, S. K. Majumder, 2023. The effects of Lithium ion on human red blood cells studied using optical spectroscopy and laser trap, Eur. Biophys. J. 52, 91-100*
2.	*Y. Singh, A. Chowdhury, R. Dasgupta, S. K. Majumder, 2021. The effects of short term hyperglycemia on human red blood cells studied using Raman spectroscopy and optical trap, Eur. Biophys. J. 50, 867-876*
3.	*A. Chowdhury, Y. Singh, U. Das, D. Waghmare, R. Dasgupta, S. K. Majumder, 2021. Effects of mobile phone emissions on human red blood cells, J. Biophoton. 14, e202100047*
4.	R. Dasgupta, 2019. Nobel Prize in Physics: Optical Tweezers, Physics News (Bulletin of the Indian Physics Association) 49, 8-12.
5.	*Y. Singh, A. Chowdhury, C. Mukherjee, R. Dasgupta, S. K. Majumder, 2019. Simultaneous photoreduction and Raman spectroscopy of red blood cells to investigate the effects of organophosphate exposure, J. Biophoton. e201800246.*
6.	*M. Karimi, J. Steinkuhler, D. Roy, R. Dasgupta, R.Lipowsky, R. Dimova, 2018. Asymmetric Ionic Conditions Generate Large Membrane Curvatures, Nano Lett. 18, 7816-7821*
7.	A. Chowdhury, D. Waghmare, R. Dasgupta, S. K. Majumder, 2018. Red blood cell membrane damage by light-induced thermal gradient under optical trap, J. Biophoton. 11, e201700222
8.	R. Dasgupta, M. S. Miettinen, N. Fricke, R. Lipowsky, R. Dimova, 2018. The glycolipid GM1 reshapes asymmetric biomembranes and giant vesicles by curvature generation, Proc. Natl. Acad. Sc. (USA) 115, 5756-5761.

9.	A. Chowdhury and R. Dasgupta, S. K. Majumder, 2017. Changes in hemoglobin-oxygen affinity with shape variations of red blood cells, J. Biomed. Opt. 22, 105006.
10.	A. Dalal, A. Chowdhury, R. Dasgupta, S. K. Majumder, 2017.Improved generation of periodic optical trap arrays using noniterative algorithm, Opt. Eng. 56, 094113