

Winner of Stree Shakti Science Samman

Prof. Rupamanjari Ghosh, Eminent Scientist



Stree Shakti Science Samman is an award to honour a woman scientist who has provided an original contribution to Science in India, with research of high quality, which is relevant and beneficial to society.

Professor Rupamanjari Ghosh started her research career in the field of Quantum Optics with a Ph.D. under Prof. L. Mandel at the University of Rochester in 1987 – this work on two-photon interference effects has been very well-cited in research papers, and also in research-level to undergraduate-level books.

Returning to India, she has been carrying out high-quality original research in the areas of Experimental and Theoretical Quantum Optics, Laser Physics, Nonlinear Optics, and more recently, in the emerging field of Quantum Information (and Atomic Physics). The work has resulted in publications in the best of international Physics and Optics journals. Her work has got acknowledgment from the research community, even from outside the country.

Besides contributing to the visibility of (and earning credits for) fundamental as well as applied science in India, and training research students from all walks of life, her other active roles for the society at large have been numerous. To cite a few:

- Being an excellent speaker, she is very frequently invited to deliver lectures on the subject for a wide audience. A couple of her lectures on Optical Physics have been made into popular videos by the CEC-UGC.
- As the Chief Advisor for Class IX and X Science textbooks of NCERT 2005-06, she inspired and worked with her team attempting to produce main-stream textbooks “with a difference” in remarkably short time-scales – the books have been a tremendous success with the large volume of students these cater to.
- As the Delhi Coordinator for the interviews of candidates under the Kishore Vaigyanik Protsahan Yojana (KVPY), DST since its initiation in 1999, she has been instrumental in generating excitement for questioning in Science among the youngsters.
- On the JNU campus and outside, she is well known for her stand and efforts to bring in gender-justice and environment-consciousness. Along with her stride for academic excellence, she worked for these causes as Chairperson of the Gender Sensitisation Committee against Sexual Harassment (GSCASH) of JNU, as the Chairperson of the Committee to Review the Rules and Procedures of GSCASH, and also being the President of the JNU Teachers’ Association on popular demand.

Some of her recent publications are:

1. “Reflection and transmission spectra for ultrashort pulse propagation in a one-dimensional nonlinear photonic crystal” – A K Hafiz and R Ghosh, *Journal of the Optical Society of America B* **23**, 1091 (2006);
Selected for the July 2006 issue of *Virtual Journal of Ultrafast Science* [<http://www.vjultrafast.org>]
2. “Quantum phase diffusion in quantum nondemolition systems” – S. Banerjee, J. Ghosh and R. Ghosh, *Physical Review A* **75**, 062106 (2007)
3. “Observation of ultra-narrow electromagnetically induced transparency and slow light using purely electronic spins in a hot atomic vapor” – F. Goldfarb, J. Ghosh, M. David, J. Ruggiero, T. Chanelière, J.-L. Le Gouët, H. Gilles, R. Ghosh and F. Bretenaker, *Europhysics Letters* **82**, 54002 (2008)
4. “Strange bifurcation and phase-locked dynamics in mutually-coupled diode laser systems” – P. Kumar, A. Prasad and R Ghosh, *Journal of Physics B: Atomic Molecular and Optical Physics* **42**, 145401 (2009)
5. “Analysis of electromagnetically-induced transparency and slow light in a hot vapor of atoms undergoing collisions” – J. Ghosh, R. Ghosh, F. Goldfarb, J.-L. Le Gouët and F. Bretenaker, *Physical Review A* (accepted 2009).