

Award Ceremony

**2017 ICO/ICTP
Gallieno Denardo Award**

21 February 2017, 15:45

Budinich Lecture Hall

Lecture by Award winner Goutam Kumar Samanta

Nonlinear generation and interaction of structured beam coherent radiation



Structured coherent optical beams including optical vortices, hollow Gaussian beams, and Airy beams have found a wide range of applications in a variety of fields in science and technology. To date, all existing techniques used to generate such beams suffer from different limitations, including lower output power and restricted wavelength coverage. On the other hand, interactions of such beams with nonlinear media are mostly unexplored. We have been involved in the study of nonlinear interaction of optical beams with different spatial structures. Here, we discuss our recent results on nonlinear generation of various structured laser beams including optical vortices, perfect vortices, Airy beams, and hollow Gaussian beams and some of their applications.

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Welcome remarks by Fernando Quevedo, Director, ICTP

Remarks by ICO Past President/Chair of Selection Committee Maria Calvo

The recipient of the 2017 ICO/ICTP Gallieno Denardo Award is Goutam Kumar Samanta of the Physical Research Laboratory in Ahmedabad, India. The Award recognizes Samanta's significant contributions to the field of nonlinear optics, lasers and quantum optics, as well as his efforts in popularizing science among school students in India. Samanta's research interests include structured laser beams, nonlinear generation of structure beams, optical parametric oscillators, and development of entangled photon source with high brightness.

Samanta received B.Tech and M.Tech degrees in optics and optoelectronics from the University of Calcutta in 2002 and 2004, and a PhD in photonics from the Institute of Photonics Sciences (ICFO), Barcelona, Spain in July 2009. He joined the Physical Research Laboratory, India in October 2010 as a faculty member. He is a life member of the Indian Laser Association, India and a regular member of the Optical Society of America and SPIE, USA. In addition to his regular research activities, Samanta promotes optics and photonics among school and college students in India through hands-on experiments.

About the ICO/ICTP Gallieno Denardo Award

The ICO/ICTP Gallieno Denardo Award is given annually to researchers younger than 40 years of age from a developing country who have made significant contributions to the field of optics or photonics. The recipient receives a certificate, US \$1,000, and an invitation to participate in and deliver a lecture at an ICTP activity relevant to optics.