

The recipients of the 2025 ICO/ICTP Gallieno Denardo Award are:

Omnia Hamdy Abdelrahman NEMATALLAH

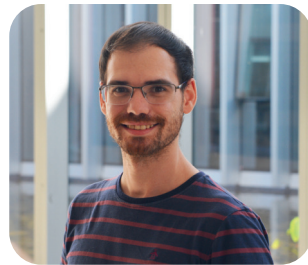
Full-time Associate Professor, The National Institute of Laser Enhanced Sciences, Cairo University; Part-time Associate Professor, School of Electronics, Communications and Computer Engineering, Egypt-Japan University of Science and technology (EJUST), Alexandria, Egypt; and Part-time Associate Professor, Faculty of Engineering, October University for Modern Sciences & Arts (MSA), 6 October, Egypt.



“For her groundbreaking work in biophotonics and the development of innovative optical technologies for biomedical applications having important implications for public health, and for her strong mentorship of young scientists, encouraging interdisciplinary approaches that strengthen the field, especially across developing regions.”

Gustavo GRINBLAT

Professor, Department of Physics, Faculty of Exact and Natural Sciences, University of Buenos Aires, Argentina and Argentine Research Council (CONICET) Researcher, Buenos Aires Institute of Physics (IFIBA), CONICET-University of Buenos Aires, Argentina.



“For his important contributions to nonlinear and ultrafast optics in dielectric nano-resonators with potential applications in telecommunication and information processing, his active leadership within the Argentine optics and physics communities, and outreach activities aimed at high school students”.

Award Ceremony

**2025 ICO/ICTP
Gallieno Denardo
Award**

4 March 2025, 15:00
Kastler Lecture Hall

Programme

LECTURE BY OMNIA HAMDY ABDELRAHMAN NEMATALLA

Illuminating Life: Advancements in Biophotonics for Biomedical Applications

Biophotonics, the science of light-matter interactions in biological systems, has revolutionized biomedical research and healthcare. By leveraging the unique properties of light, researchers can visualize, diagnose, and even treat diseases in a noninvasive manner. My work focuses on harnessing advanced biophotonics techniques to explore applications ranging from optical tissue characterization and laser-based therapeutics to biosensing and imaging innovations. This talk will provide insights into recent breakthroughs in biophotonics, including laser-assisted medical diagnostics, photonic biosensors for disease detection, and novel light-based therapies. I will also discuss the challenges and future prospects of this dynamic field, emphasizing its growing impact on precision medicine and biomedical engineering.

LECTURE BY GUSTAVO GRINBLAT

Manipulating light and hypersound waves at the nanoscale

The presentation will highlight results from resonant photonic nanostructures (including nanoantennas and metasurfaces) composed of metallic and dielectric materials. These structures are explored for applications in ultrafast light modulation (sub-100 fs), nonlinear optical frequency conversion, the determination of mechanical properties of thin films in the GHz range, and the control of the directionality of hypersound waves at the nanoscale. Additionally, findings related to the use of two-dimensional materials in these areas will also be presented.

2025 ICO/ICTP GALLIENO DENARDO AWARD CEREMONY PROGRAMME

15:00	Welcome remarks Speaker: Atish DABHOLKAR (Director, ICTP)
15:10	Introduction and SPIE-Optica presentations
15:25	ICO Presentation of the awards
15:40	Illuminating Life: Advancements in Biophotonics for Biomedical Applications Speaker: Omnia Hamdy Abdelrahman NEMATALLAH (Cairo University, Egypt)
16:10	Manipulating light and hypersound waves at the nanoscale Speaker: Gustavo GRINBLAT (Universidad de Buenos Aires, Argentina)
16:40	Group Photo

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.