

LOPS® 20244th Edition of Annual Conference on**LASERS, OPTICS, PHOTONICS,
SENSORS, BIO PHOTONICS &
ULTRAFAST NONLINEAR OPTICS****JUNE 07-10, 2024**

The focus will be on Higher harmonic Generation (HHG) and Supercontinuum (SC) which are Nonlinear optical effects. These can be described by electromagnetic theory arising from Kerr index n^2 . This HHG is relevant to the outcome of Attosecond laser pulse generation which was awarded the 2023 Nobel prize and possibly relevant for Zeptosecond laser pulses.

Biography

In 2019, Robert Alfano received SPIE (Society of Photo-Optical Instrumentation Engineers) Gold Medal Award, the highest honor bestowed by the society. Robert Alfano is an Italian-American experimental physicist. He is a Distinguished Professor of Science and Engineering at the City College and Graduate School of New York of the City University of New York, where he is also the founding Director of the Institute for Ultrafast Spectroscopy and Lasers (1982). He is a pioneer in the fields of Biomedical Imaging and Spectroscopy, Ultrafast lasers and optics, tunable lasers, semiconductor materials and devices, optical materials, biophysics, nonlinear optics and photonics; he has also worked extensively in nanotechnology and coherent backscattering. His discovery of the white-light supercontinuum laser is at the root of optical coherence tomography, which is breaking barriers in ophthalmology, cardiology, and oral cancer detection (see "Better resolution with multibeam OCT," page 28) among other applications. He initiated the field known now as Optical Biopsy. He recently calculated he has brought in \$62 million worth of funding to CUNY during his career, averaging \$1.7 million per year. He states that he has accomplished this feat by "hitting the pavement"; he developed a habit of aggressively reaching out to funding partners and getting them interested in his work. Alfano has made discoveries that have furthered biomedical optics, in addition to fields such as optical communications, solid-state physics, and metrology. Alfano has an outstanding track record for achievements regarding the development of biomedical instruments. His contributions to photonics are documented in more than 700 research articles, 102 patents, several edited volumes and conference proceedings, and well over 10,000 citations. He holds 45 patents and published over 230 articles in the biomedical optics area alone. His discovery of the white-light supercontinuum laser is at the root of optical coherence tomography, which is breaking barriers in ophthalmology, cardiology, and

**UPDATE ON ULTRAFAST
OPTICAL PHYSICS FOR THE
GENERATION OF HHG AND
SUPERCONTINUUM****Professor Robert R. Alfano**

The City College of New York, USA

oral cancer detection (see "Better resolution with multibeam OCT," page 28) among other applications. Alfano has trained and mentored over 52 PhD candidates and 50 post-doctoral students. For the past ten years, he has trained innumerable high school students in hands on photonics.

Areas of Expertise/Research:

Bonding of Tissues with Light Biomedical Optics and Detection of Cancer with Light Spectroscopy Expertise in Properties of Light and Photonics Ultrafast Spectroscopy and Lasers Physics and Electrical Engineering Science and Engineering Find more information at : https://en.wikipedia.org/wiki/Robert_Alfano#

AWARDS

Michael S. Feld Biophotonics Award
Charles Hard Townes Medal
Plenary Speaker, Chief Planning Committee member, LOPSTM # SPIE Gold Medal (2019)
Founding Director of the Institute for Ultrafast Spectroscopy and Lasers (1982)
Pioneer, Biomedical Imaging, Spectroscopy, Ultrafast lasers, Optics, Tunable Lasers semiconductor materials devices, optical materials, biophysics, nonlinear optics and photonics
Discoverer, white-light Supercontinuum laser | # 700 research articles, 102 patents # 10,000 citations
45 patents and 230 articles: Biomedical optics area | # SPIE Gold Medal 2019
American Physical Society Arthur Schawlow Award 2013
OSA Charles Townes Award 2008
Britton Chance Biomedical Optics Award 2012
Coherent Lifetime Achievement Award in Biomedical Optics 2002
Fellow, the American Physical Society (APS) | # Fellow, Optical Society (OSA)
Fellow, New York Academy of Sciences
Fellow, Institute of Electrical and Electronics Engineers (IEEE)
Fellow, the International Society for Optics and Photonics (SPIE)
Eastern New York Intellectual Property Law Association (ENYIPLA) Inventor of Year award (2018) |