

> MENU

Congratulations 2024 Recipient

Franco Nori

RIKEN, Japan, and University of Michigan, USA



Learn more about the medal and its establishment

[History and Funding](#) >

Information and deadlines for nomination

[Nomination Guide](#) >

View the members

[Selection Committee](#) >

Charles Hard Townes Medal

Presented to an individual or a group for outstanding experimental or theoretical work, discovery or invention in the field of quantum electronics.

The medal was established in 1980 to honor Charles Hard Townes, whose pioneering contributions to masers and lasers led to the development of the field of quantum electronics. It is endowed by Bell Laboratories, Hewlett-Packard, The Perkin Fund, and students and colleagues of Charles Townes.

Winners

2024



[Franco Nori](#)

For his many fundamental contributions to quantum optics, quantum information processing, and quantum circuits, and for the development of key quantum software tools

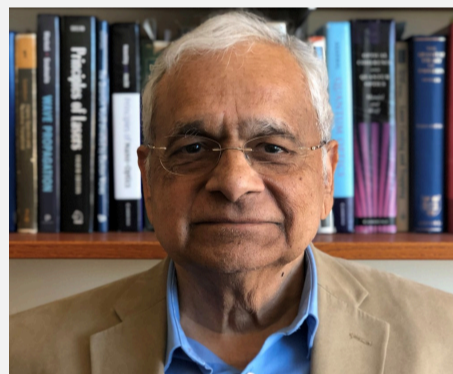
2023



[Andrew M Weiner](#)

For ground-breaking work bringing optical frequency combs to the quantum world and developing innovative applications spanning several fields, including coherent control, generation and line-by-line manipulation of frequency combs, and ultrabroadband radio-frequency photonics

2022



[Girish S Agarwal](#)

For discoveries in theoretical quantum optics especially vacuum induced coherences, photon added coherent states, non-classical cat states for qubits via engineered many body interactions, and transparency in optomechanical systems.

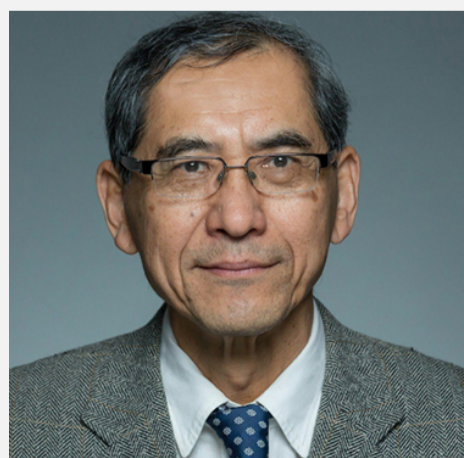
2021



[Mikhail Lukin](#)

For his pioneering theoretical and experimental contributions to quantum nonlinear optics and quantum information science and technology, and for the development and application of nanoscale quantum systems for sensing.

2020



[Toshiaki Tajima](#)

For seminal contributions in broad and novel plasma physics and laser-based accelerator physics,

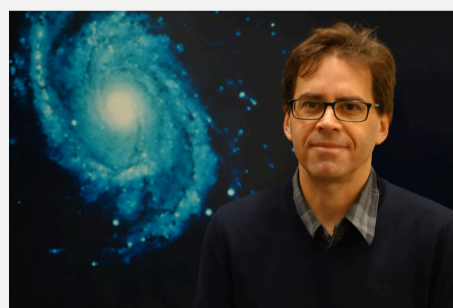
2019



[Alexander L Gaeta](#)

For seminal contributions to chip-based nonlinear photonics, nonlinear optics in photonic crystal

2018



[Peter K Fritschel](#)

For advances in quantum-limited precision measurement in the Advanced LIGO detectors, leading

2017



[Adolf Giesen](#)

For pioneering breakthroughs in the field of solid-state lasers by the invention of and fundamental

introducing the concept of Laser Wakefield Acceleration

2016



[Robert W Boyd](#)

For fundamental contributions to the field of nonlinear optics, including the development of methods for controlling the velocity of light, of quantum imaging methods, and of composite nonlinear optical materials

2012



[Philippe Grangier](#)

For breakthroughs in fundamental quantum optics, based on invention and/or development of experimental methods and techniques, and leading to groundbreaking applications in quantum information

2008



[Robert R Alfano](#)

For contributions to the discovery and investigation of supercontinuum generation and the development of tetravalent chromium-based tunable solid state lasers

2004

fibers, and nonlinear propagation of ultrashort laser pulses

2015



[Ursula Keller](#)

For seminal contributions in the fields of octave-spanning lasers, frequency comb technology, and high repetition-rate ultrafast semiconductor disc lasers

2011



[Wilson Sibbett](#)

For pioneering breakthroughs in the science and technology of ultrashort optical pulses including generation, measurement and the development of practical sources for applications in photophysics, photochemistry, photomedicine, engineering and communications

2007



[Serge Haroche](#)

For pioneering experiments in cavity quantum electrodynamics, starting with the observation of superradiance, leading to the twophoton maser, non-destructive measurements of photons, and decoherence of Schrödinger cats

2003

to the first direct detection of gravitational waves

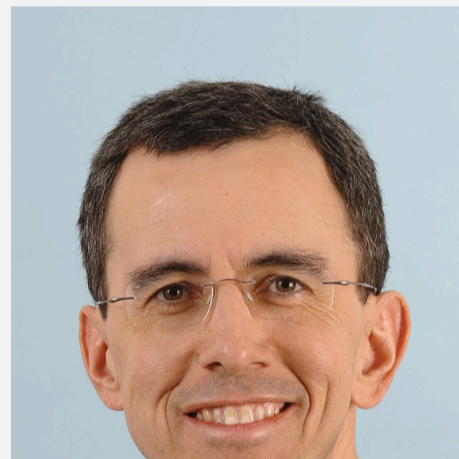
2014



[Masataka Nakazawa](#)

For seminal contributions to the science and applications of ultrafast optics and ultrastable narrow-linewidth lasers

2010



[Atac Imamoglu](#)

For his seminal contribution to electromagnetically induced transparency and pioneering work on quantum information processing with quantum dots

2006



[Orazio Svelto](#)

For pioneering work on ultrashort laser pulses and solid state lasers, and for the invention of the hollow-fiber compressor, leading to advances in extreme nonlinear optics and attosecond science

2002

contributions to thin disk lasers

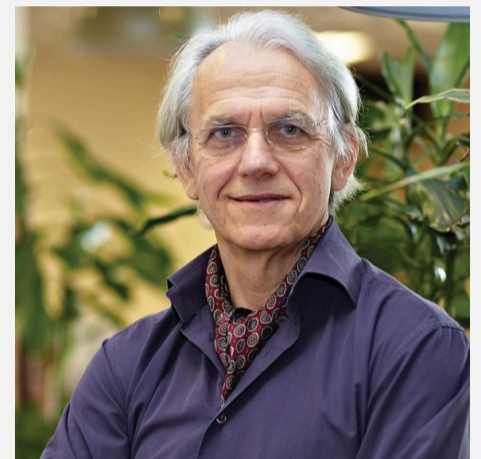
2013



[Guenter Huber](#)

For seminal contributions to solid state lasers, in particular the growth, development, and fundamental characterization of new laser materials based on laser active transition metal and rare earth ions

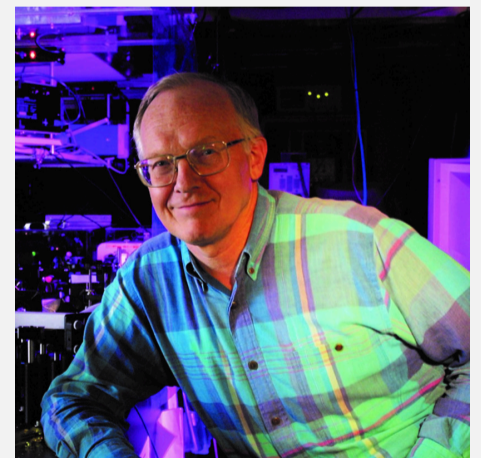
2009



[Gerard A Mourou](#)

For ground-breaking applications of high-intensity lasers to precision micromachining, eye surgery and relativistic light-matter interactions

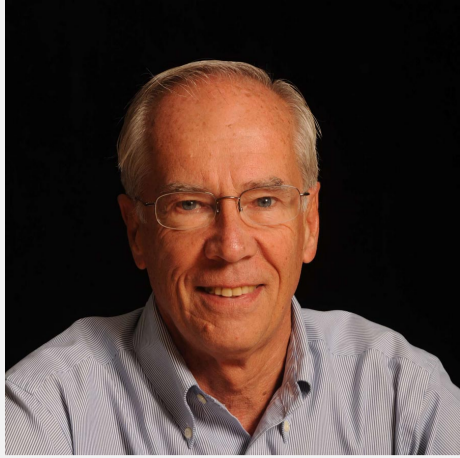
2005



[Paul B Corkum](#)

For key contributions to the understanding of the physics of atoms and molecules in intense laser fields and the application of these ideas to ultra-fast measurement techniques

2001



[Erich P Ippen](#)

For his many outstanding, pioneering and sustained contributions to ultrafast science and technology, and fundamental nonlinear optics

2000



[David C Hanna](#)

For seminal contributions to the development of coherent light sources and for leadership within the worldwide optics community

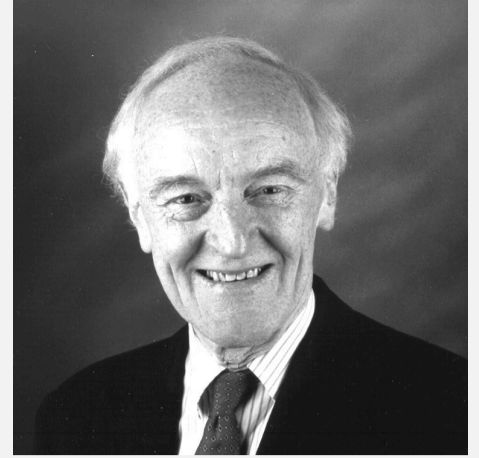
1999



[Charles V Shank](#)

For the development of ultra short lasers from the near-infrared to x-rays, and their application to condensed-matter problems in chemistry, physics, and biology

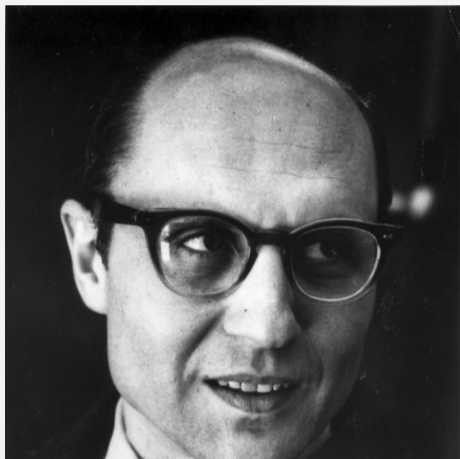
1998



[A. David Buckingham](#) *

For many theoretical and experimental contributions to electro-optics and magneto-optics, including the invention and application of a direct method for measuring molecular electric quadruple moments

1997



[Richard G Brewer](#) *

For his outstanding contributions to quantum optics, characterized by originality and diversity, involving the interplay of theory and elegant experiments to elucidate fundamental problems of coherent optical transients, using atoms, molecules, solids and trapped ions

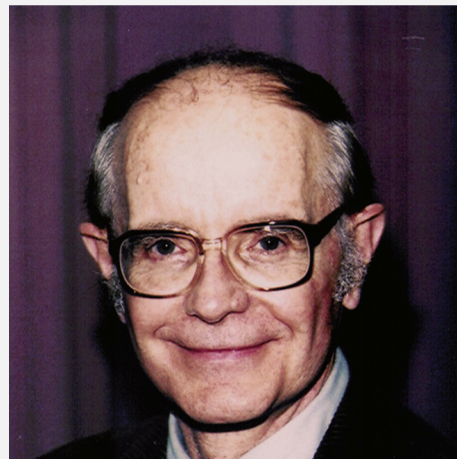
1996



[Charles H Henry](#) *

For fundamental contributions to the understanding of the optical properties of quantum wells, semiconductor lasers, and advanced photonic technologies

1995



[Marlan O Scully](#)

For his role in laying the theoretical foundation for laser science, free-electron lasers, and lasers without inversion

1994



[Linn F Mollenauer](#) *

For pioneering ultrafast optics in the 1.5 μm wavelength regime, demonstrating optical soliton propagation in fibers, and developing innovative soliton systems that have set records for high-capacity repeaterless data transmission

1993



[Chung Tang](#) *

For seminal and pioneering advances in the field of nonlinear optics and laser physics

1992



[Ivan P Kaminow](#) *

For outstanding leadership and contributions to the field of quantum electronics over the past 40 years, which include pioneering the invention and development of titanium-diffused LiNbO₃ waveguides and revolutionary innovations in electro-optic modulators

1991



[Joseph H Eberly](#)

For his contributions to theoretical optical physics, in particular, his work on coherent pulse propagation and superradiance, atomic radiation theory, cavity quantum electrodynamics, and multiphoton intense field phenomena

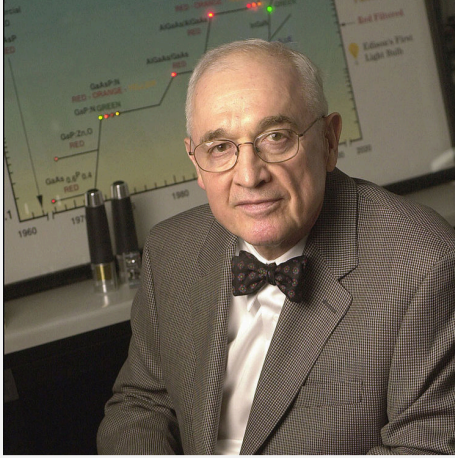
1990



[Claude Cohen-Tannoudji](#)

For his contributions to optical pumping and his development of the dressed atom method for describing electromagnetic interactions with matter

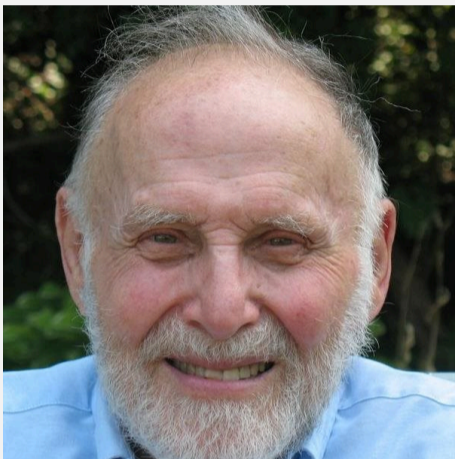
1989



[Nick Holonyak, Jr.](#) *

For his career in quantum electronics, particularly his contributions to semiconducting, light-emitting sources

1988



[Arthur Ashkin](#) *

For original, creative, experimental, and theoretical work that initiated the study of laser radiation pressure and for continuing exceptional contributions

1984



[Veniamin P Chebotaev](#)

In recognition of independent pioneering efforts and continuing contributions in the field of laser metrology, ultrahigh resolution spectroscopy, and ultrastable laser sources

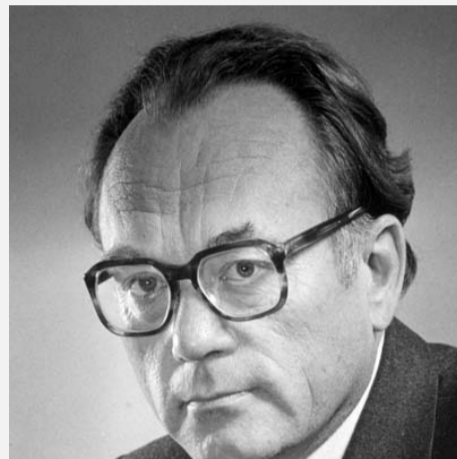
1981



[Elias Snitzer](#) *

For his pioneering contributions to solid state lasers and fiber optics, in particular, neodymium-glass and erbium-glass lasers, the first fiber optic laser, and for innovative contributions to fiber optic amplifiers and fiber optic lasers

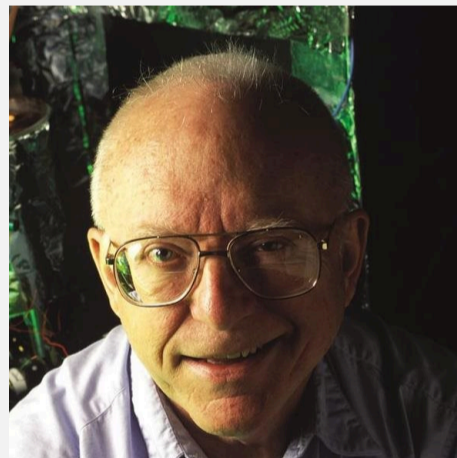
1987



[Hermann A Haus](#) *

For his analysis of laser noise, the development of the mode-locked semiconductor laser, and contributions to our understanding of nonlinear waveguide interactions

1984



[John L Hall](#)

In recognition of independent pioneering efforts and continuing contributions in the field of laser metrology, ultrahigh resolution spectroscopy, and ultrastable laser sources

1981



[Herbert Walther](#) *

For his fundamental contributions to the quantum electronics of atoms and molecules

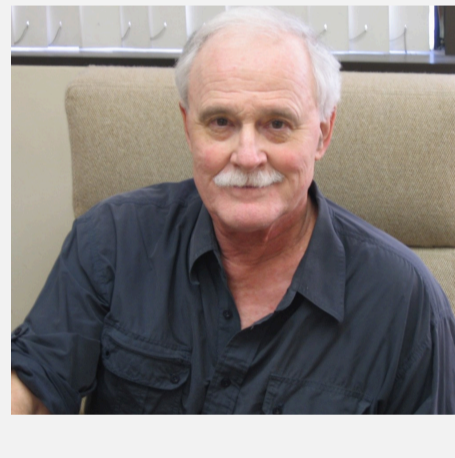
1986



[Yuen-Ron Shen](#)

For his pioneering and continuing contributions to the field of nonlinear optics

1983



[Robert W Hellwarth](#) *

For his invention of the Q-switched laser, codiscovery of the Raman laser and explanation of stimulated scattering phenomena, and the theory of optical phase conjugation



[D. J Bradley](#) *

For his pioneering contributions to the fields of nonlinear optics, the physics of dye lasers, and the generation and detection of ultrashort light pulses

1985



[Stephen E Harris](#)

For his contributions to the development of techniques for the generation of extreme ultraviolet and soft x-ray radiation

1982



[Chandra Kumar N Patel](#)

For his pioneering contributions to quantum electronics, including the discovery of many gaseous laser systems, particularly to the CO2 laser; his invention and development of the spin-flip Raman laser; his high-resolution studies for pollution detection in the atmosphere; and his contributions to acousto-optic techniques for measuring small optical absorptions



[James Gordon](#) *

For his contributions to the successful operations of the first quantum-electronics device, the ammonia maser

* Deceased



[Herbert Zeiger](#)

For his contributions to the successful operations of the first quantum-electronics device, the ammonia maser

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