

Erio TOSATTI



Personal data

Birth: Nonantola (Italy) 09 Nov 1943
Nationality : Italian
Marital status: married, 3 children
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Education

1967 Degree in Physics, University of Modena, cum Laude
1970 Physics Doctorate, Scuola Normale Superiore Pisa, magna cum Laude.

Positions

1977-now Founder and Senior Scientist , Condensed Matter Group,
Int'l Centre for Theoretical Physics (ICTP) Trieste
1980- now Professor and Founder, Condensed Matter Theory Group,
Int'l School For Advanced Studies (SISSA),Trieste.
Continuing as Emeritus from Nov. 2014.
2002-03 Director a.i., Int'l Centre for Theoretical Physics (ICTP) Trieste
2003-now Chairman, ICTP Scientific Programmes Office
2013-now EU Commission ERC Advanced Grantee, SISSA & ICTP Trieste

1970-71 Italian Air Force, weather forecast service.
1971-76 CNR Researcher, University of Rome "La Sapienza"
1972-73 Royal Society and NATO Fellow, Cavendish Laboratory
and Clare Hall, Cambridge, (collab. of P.W. Anderson)

1974 DFG Visitor, University of Stuttgart, Germany (group of H. Haken)
1977 Senior NATO Fellow, Stanford University, USA (group of S.Doniach)
1977-80 CNR Senior Researcher, and Physics Lecturer, University of Trieste

- 984-85 Visiting Scientist, IBM Zurich Research Center (collaborator of T. Schneider, K. A. Muller, H. Rohrer, G. Binnig), Zurich, Switzerland
1985 World Bank Expert, Peking University, Beijing, China
1999 Gordon Godfrey Visiting Scholar, UNSW Sidney, Australia
2001 Visiting Scientist, DIPC San Sebastian, Spain
2008...2018 Distinguished Visiting Scholar, Fudan University, Shanghai, China

Memberships

Italian Physical Society
European Physical Society
American Physical Society (Fellow, and life member)

Honors

The Francesco Somaini Triennial Physics Prize, Como, 1997.
<http://www.visitcomo.eu/export/sites/default/it/scoprire/alessandro-volta/allegati/Premio-per-la-fisica-francesco-somaini-fondazione-somaini.pdf>

Fellow of the American Physical Society, 2001 .
Citation: "For his seminal contributions to the theory of solids, such as, the faceting, reconstruction, preroughening and melting of surfaces, and the multi-shell helical structure of gold nanowires, while also serving as a scientific leader in fostering international physics."Nominated by: Forum on International Physics

Tate Medal for International Leadership in Physics, American Institute of Physics, Washington DC, 2005.

Citation: Few have reached out more to physicists in developing nations than Italian scientist Erio Tosatti, who has won the American Institute of Physics (AIP) Tate Medal for International Leadership in Physics. Awarded to a non-US scientist every two years, the Tate Medal, along with a certificate and a \$10,000 check, will be presented to Tosatti at AIP's 75th Anniversary Celebration on May 3, 2006 in Washington, DC. AIP will honor Tosatti for persistently helping scientists from developing countries and working with them to elevate their research programs to international standards. His attention and concern for scientists from these nations, according to the AIP Tate Medal committee, "has probably left much deeper marks in many countries than many of the programs that make the headlines."

Member, Accademia Nazionale del Lincei, Rome, 2006 (full member from 2019)
Citation (translated from Italian): Tosatti is internationally renowned for his theoretical research on the structure of matter , as well as for having created from scratch in Trieste one of the strongest schools in this field.

Foreign Associate, U.S. National Academy of Sciences, Washington D.C., 2011.
Announcement: It gives me great pleasure to inform you that today, during the 148th annual meeting of the National Academy of Sciences, you were elected a foreign associate of our Academy. Your colleagues in the United States recognize your significant contributions to science and invite you to join our fellowship. (M. T. Clegg, Foreign NAS Secretary, May 5, 2011).

Corresponding Member, Accademia Istituto Lombardo (Brera), Milan, 2012.
Founded by Alessandro Volta
Announcement: ... to inform you that on the session of 28 June 2012 you were elected Corresponding Member (non resident) of this Academy, Class of Mathematical Sciences, Chemistry & Physics Section. While congratulating you, I am confident that our Academy will be able to count on your collaboration so as to maintain and increase the high scientific qualification characterizing it for over two centuries — Prof Gianpiero Sironi, President

Enrico Fermi Prize, Italian Physical Society, 2018
(shared with F. Capasso, L.P. Pitaevskii)
Citation: for his fundamental theoretical contributions aimed to understand the optical properties of solids, in particular of surface and transport phenomena, even in extreme conditions of dimensional confinement, high temperature and pressure".

Foreign Academician, Chinese Academy of Sciences, Beijing 2019.
Announcement: "... you were elected a Foreign Member of CAS at its Membership Election Meeting held on November 8, 2019 for your scientific achievements and contributions to the promotion of the development of science and technology in China." -- Professor Chunli Bai, President, Chinese Academy of Sciences

Named Lectures

World Bank Expert Colloquium, Peking University, Beijing, 1985
Solvay Conference Invited Lecturer, Austin, 1987
The Eli Burstein Lecture Award, University of Pennsylvania, Philadelphia, 1994
The Thomas Young Soiree, Imperial College London, 2010
The Alessandro Volta Medal and Lecture, Pavia, 2011
The Enrico Fermi Colloquium, LENS, Florence, 2011
The Sackler Lecture, Tel Aviv, 2017
The Josef Stefan Medal and Lecture, Ljubljana, 2017
The Spirit of Salam Award Lecture, Trieste, 2020

Scientific production and impact

Books (Edited)		12
Articles in peered-reviewed journals and in books	above	550
Total Citations (Google Scholar Citations)	approx	28,000
Hirsch index H (Google Scholar Citations)	approx	88
PhD Students Supervised 1981-2020		37

Current Research Activity

Non-equilibrium Condensed Matter, Classical and Quantum Theory of Nanofriction
Mott Insulating and Superconducting States of Fullerenes and Organics
Kondo Effect in Metallic and Magnetic Nanocontacts
Strong Electron Correlations in Solids, Surfaces, and out of equilibrium
Physics of Ultra-High Pressures

Research Highlights

Tosatti is a condensed matter theoretical physicist active in research on a wide range of phenomena. His work covered optical properties and dielectric response of solids; surface physics in all its aspects; fullerene physics; the first Scanning Tunneling Spectroscopic prediction for graphite; the state of matter at extreme pressures; physics of metal nanowires; magnetism and Kondo effects at nanocontacts. The theory of strongly correlated superconductivity proposed with

his group is vindicated in the fulleride compound Cs₃C₆₀. Pioneering papers with G.E. Santoro on quantum annealing are basic to current developments in quantum computing. Tosatti became recently interested in the theory of nanofriction, a field where he also obtained a European Advanced Grant 2013-2018, and most recently the theory part of a second ERC Grant 2019-2024.