

GENERAL INFO:

Name: Massimo Trovato;

Date and place of birth: 10/12/1960, Catania - Italy;

Tel.: ++ 39-0957383037

Address: Department of Mathematics and Computer Science, Viale Andrea Doria, 6
Block III, office 37

E-mail: massimo.trovato@unict.it; trovato@dmi.unict.it

Home Page <http://www.dmi.unict.it/trovato/>

Educational background:

- **1993:** Laurea cum Laude in Physics, University of Catania, Italy.
- **1994-1997:** PhD. in Physics, University of Catania, Italy. PhD thesis: "Application of Extended Thermodynamics for the transport description of the hot carriers in Silicon". Advisor Prof. A.M.Anile.

Professional experiences:

- **1993:** Award "Accademia Gioenia", of SGS Thomson Microelectronics, for the best thesis carried out on arguments of Physics, Engineering and Mathematics with applications in microelectronics.
- **1994:** Grant with SGS Thomson Microelectronics (Co.Ri.M.Me) for the development of "Mathematical models for charge transport in semiconductors".
- **1994:** Winner of a CNR fellowship on the research theme "Problems of diffusion and transport in thermodynamics".
- **1997:** Research worker for Joint Study Agreement between the Department of Mathematics, University of Catania, and IBM Research Division Thomas J. Watson Research Center (Yorktown Heights, New York), in the group "Exploratory Memory and Device Modelling".
- **1997-1999:** Temporary professor of Mathematical Physics, Faculty of Engineering, University of Catania.
- **1999-2000:** Research Fellowship on "Study of mathematical models of phenomena dissipated for complex fluids and plasmas", Faculty of Engineering, University of Catania, November 2nd, 1999-August 31th, 2000.
- **2000-2001:** Research Professor of Mathematical Physics, in the Faculty of Mathematical, Physical, and Natural Sciences, University of Sassari, Italy.
- **2002-2003:** Research Fellowship on "Hydrodynamical models and problems of stability in Thermodynamics with applications to the transport in the semiconductors", Faculty of Mathematical, Physical, and Natural Sciences, University of Catania, Italy.
- **2004-2009:** Research Professor of Mathematical Physics, in the Faculty of Mathematical, Physical, and Natural Sciences, University of Catania, Italy.

- **2007-2009:** Scientific coordinator of the following scientific GNFM (Italian National Group for Mathematical Physics) projects:
 1. GNFM project ‘Young Researchers’ (2007-2008): "Extended Thermodynamics: formulation and application to classics and quantum models".
 2. GNFM project ‘Young Researchers’ (2008-2009): “Analytical and numerical methods for the study of classics and quantum models in Extended Thermodynamics and for the analysis of the stability in fluid-dynamics”.
- **2010:** Full Professor of Mathematical Physics, starting from the 01/11/2010, in the University of Catania, Italy.
- **2014:** From 2014 to date he is Director of the INDAM Unit of the University of Catania at the Department of Mathematics and Computer Science

Teaching activity of the last years

A.A. 2018/2019 - Bachelor's Degree in Mathematics - second year- *Mathematical Physics I*

A.A. 2018/2019 - Bachelor's Degree in Physics - second year - *Analytical Mechanics*

A.A. 2019/2020 - Bachelor's Degree in Mathematics - third year- *Mathematical Physics II*

A.A. 2019/2020 - Bachelor's Degree in Physics - second year - *Analytical Mechanics*

A.A. 2020/2021 - Bachelor's Degree in Mathematics - third year- *Mathematical Physics II*

A.A. 2020/2021 - Bachelor's Degree in Physics - second year - *Analytical Mechanics*

A.A. 2021/2022 - Bachelor's Degree in Mathematics - third year- *Mathematical Physics II*

A.A. 2021/2022 - Bachelor's Degree in Physics - second year - *Analytical Mechanics*

A.A. 2022/2023 - Bachelor's Degree in Mathematics - third year- *Mathematical Physics II*

A.A. 2022/2023 - Bachelor's Degree in Physics - second year - *Analytical Mechanics*

Research activity:

Currently full professor of Mathematical Physics at the Department of Mathematics and Computer Science of the University of Catania. During his scientific activity he has published about 50 papers, mainly on problems of:

1. Semiclassical and quantum kinetic theory with applications to semiconductors.
2. Statistical Mechanics, Variational Principles, Maximum Entropy Principle (MEP) in semiclassical framework (local theories), Quantum Maximum Entropy Principle (QMEP) with a proper nonlocal Wigner's formulation.
3. Classical and quantum Extended Thermodynamics in gas-dynamics within the framework of Fermi statistics, Bose statistics and Fractional statistics.
4. Classical and Quantum Extended Thermodynamics with applications to hot-carriers transport in semiconductors and in new-generation in 2D materials (graphene).
5. Small signal analysis for the study of dissipative phenomena in semiconductors and in new-generation 2D materials (graphene).
6. Numerical simulations for the study of charge transport in semiconductors and in new-generation 2D materials (graphene).
7. Linear and nonlinear stability in reaction and diffusion systems and in the fluid dynamics.