

Panos Argyrakis

Date of birth: 1950
Place of birth: Thessaloniki, Greece
Current address: Department of Physics University of
Thessaloniki GR-54124 Thessaloniki, Greece
Telephone: +30 - 2310 - 998043
Fax: +30 - 2310 - 998042
e-mail: panos@auth.gr

Studies

B.A.(1971), Augustana College, Sioux Falls, S.Dakota, USA. Majored in Chemistry.

M.S.(1974), University of Illinois, Urbana, Illinois USA. Majored in Chemical Physics.

Ph.D.(1979), University of Michigan, Ann Arbor, Michigan USA, in Chemical Physics.

Doctoral dissertation: Coherence studies in the first electronic excited singlet state of solid naphthalene (Supervised by Prof. R. Kopelman). Recipient of the F. Knoller fellowship.

Positions held

- **1971-1978 : Teaching and Research Assistant at the University of Illinois and at the University of Michigan, USA.**
- **1978-1979 : Lecturer, University of Michigan, Ann Arbor, Michigan, USA.**
- **1979-1980 : Researcher at the Greek Army Research Center, Galatsi, Athens, Greece, where I completed my military service.**
- **1980-1985 : Visiting Professor, Department of Physics, University of Crete, 71100 Iraklion, Greece.**
- **1985-1989 : Assistant Professor, Department of Physics, Division of Solid State, University of Thessaloniki, 54124 Thessaloniki, Greece.**
- **1989-1990 : Sabbatical year of absence at IBM Corp., Kingston-NY, USA. Scientific Engineering Computations.**
- **1989-1997 : Associate Professor, Department of Physics, Division of Solid State, University of Thessaloniki, 54124 Thessaloniki, Greece.**
- **1997-now : Professor, Department of Physics, Division of Solid State, University of Thessaloniki, 54124 Thessaloniki, Greece.**

Research Interests / Specializations

- **Theoretical Condensed Matter Physics.**

- Molecular dynamics of the solid state and of crystal lattices. Dynamical properties, transport, kinetics. Phase transitions and Statistical physics of disordered systems, disordered lattices and other structures, systems of non-integer dimensionality, fractals. Transport properties in excited states and in molecular cluster states. Trapping. Kinetic growth models, crystal growth, percolation phenomena, scaling theory. Non-equilibrium systems. Nanoparticle kinetics, Brownian rotation.
- Random walks in ordered and random lattices, and in other complex systems, their properties and applications to physical, chemical, and biological phenomena.
- Kinetics of molecular and chemical phenomena. Chemical reactions of catalytic nature on surfaces, in porous materials, on wires. Diffusion controlled processes on such systems, diffusion-limited aggregation, etc.
- Networks. Structure and Dynamics of networked system. Spreading phenomena on networks. Scale-free networks. Random networks. Social and economic networks. Properties of networked entities. Graph theory. Game Theory. Mathematical modelling and simulation of neural networks. Computational and artificial networks. Dynamics of signal transfer in neurons in biological brains and applications to learning, memory, and other functions.
- Large-scale computer simulation techniques. Monte-Carlo methods. Numerical solutions of complicated physical systems where analytical solutions are not amenable. Grid Computing and Parallel Computing. Smart algorithms for solution of Complex problems.
- Direct comparison of modelling results with experimental systems of other Laboratories in a plethora of physical problems, e.g. liquid crystals, crystal growth, nanoparticle dynamics, reaction-diffusion processes, dendrimer dynamics, pharmaceutical systems diffusion, etc.

Publications

Author of about 350 published works in the most well known international refereed journals, and in Conference Proceedings, Books, etc. (170 in journals and 180 in proceedings). There are about 100-150 citations/year to this published work (for a total of about 3000-4000). The h-factor ~ 30.

[View Publications](#)

Funding / International Collaborations

In my tenure at the University of Thessaloniki I have led a research group of average size of ten (10) members, at all levels of their study (Undergraduate to post-doctoral). Approximately one (1) PhD degree awarded per year. This research has been supported by several funding agencies, in over 50 different projects over the past 25 years, in which I was the Principal Investigator. Average funding is at the level of ~200,000 per year.

Some examples in the last decade include:

European Commission: INTAS 2000-2005

European Commission: INTERREG, 2004-2007 and 2012-2014, project ICoSCIS

European Commission: Nest (Pathfinder), STREP project DYSONET, 2005-2008, Principal Investigator, and Coordinator.

European Commission: Nanotechnologies, STREP project INTERCONY, 2006-2009

European Commission, Coordination Action project GIACS, 2004-2009

European Commission: ICT thematic Area, IP(Integrated Project) project MULTIPLEX, 2012-2016

Greek Secretariat of Research and Technology: Project PENED, 2004-2008

Greek Secretariat of Research and Technology: Several IRAKLITOS and PYTHAGORAS projects, 2004-2013.

NATO, Science for Peace Project 1997-2000

Bilateral scientific agreements with Germany, France, USA, Belgium, Russia, Bulgaria, etc.