

Curriculum Vitae

I.1. PERSONAL DETAILS

Name Theodoros
Surname Karakasidis
Current Position Professor of Applied Physics
Work Address Department of Physics, School of Sciences
University of Thessaly, Lamia, Greece (<https://www.phys.uth.gr/en/>)
Director of Condensed Matter Physics Laboratory,
<https://comphylab.phys.uth.gr/>
Director of the Graduate Program Applied Physics”
<https://ap-msc.phys.uth.gr/>
Phone (+30) 22310-60280
Mobile (+30) 6977-809006
E-mail thkarak@uth.gr, thkarak@gmail.com
[Google Scholar Profile](#)
[Scopus Profile](#)
[ResearchGate Profile](#)
[ORCHID profile](#)

I.2. EDUCATION

- *BSc in Physics*, Aristotle University of Thessaloniki, Greece (1989) (GPA 9.51/10).
- *MSc in Materials Science*, University Pierre et Marie Curie (Paris 6), Paris, France (1991).
- *PhD in Physics*, University Pierre et Marie Curie (Paris 6), Paris, France (1995).
- *Master in Education*, Greek Open University, Greece (2009).

I.3. ACADEMIC HONOURS & AWARDS

- Visiting Researcher at the Laboratoire d'Etude des Transferts en Hydrologie et Environnement, Université Joseph Fourier Grenoble, France (17 june-17 july 2012)
- Visiting Professor, Physics Dept., University of Cyprus, Nicosia (Sep 2011-Dec 2011)
- Postdoctoral grant by the National Scholarship Foundation, Greece (1-Jan-2001 to 31-Dec-2002) “Simulation of liquids using Molecular Dynamics Techniques”
- Onassis Foundation Scholarship for Graduate Studies (1991).
- Highest Grade Point Average, Dept. of Physics, University of Thessaloniki (1989).
- Scholarship for Excellence in Academic Performance, Dept. of Physics, University of Thessaloniki, National Scholarship Foundation, Greece (1985 through 1989).

I.4. RESEARCH INTERESTS

- Computational materials science
- Nanomaterials, nanofluidics and nanotechnology
- Parallel computing and computational methods
- System dynamics and non-linear time series computational analysis
- Machine learning, data analytics
- Teaching Science and Technology with the use of ICT
- Scientific Literacy, Physics Education

I.5. TEACHING EXPERIENCE

1997-present University of Thessaly.

Sep 1997 – Aug 2005	Adjunct Assistant Professor, School of Engineering, University of Thessaly, Volos, Greece
Sep 2005 – Oct 2009	Lecturer of Applied Physics, Department of Civil Engineering, School of Engineering, University of Thessaly, Volos, Greece
Nov 2009 – Feb 2014	Assistant Professor of Applied Physics, Department of Civil Engineering, School of Engineering, University of Thessaly, Volos, Greece
Feb 2014 – Aug 2018	Associate Professor of Applied Physics, Department of Civil Engineering, School of Engineering, University of Thessaly, Volos, Greece
Sept 2018 – Aug 2020	Professor of Applied Physics, Department of Civil Engineering, School of Engineering, University of Thessaly, Volos, Greece
Sept 2020 – present	Professor of Applied Physics, Department of Physics, School of Sciences, University of Thessaly, Lamia, Greece

Undergraduate courses

DEPARTMENT OF PHYSICS, University of Thessaly, Volos, Greece

- **Introduction to Contemporary Physics (winter semester)**

As Faculty member (2020)

- **Electromagnetism I (winter semester)**

As Faculty member (2020 -present)

- **General Physics II (spring semester)**

As Faculty member (2021)

- **Electromagnetism II (spring semester)**

As Faculty member (2021-present)

- **Condensed Matter Physics I (spring semester)**

As Faculty member (2022-present)

DEPARTMENT OF CIVIL ENGINEERING, University of Thessaly, Volos, Greece

- **Physics I (winter Semester)**

As Adjunct Lecturer (1997 to 2004), As Faculty member (2005 to 2020)

- **Physics II (spring semester)**

As Adjunct Lecturer (1997 to 2004), As Faculty member (2005 to 2020)

- **Numerical Analysis (winter Semester)**

As faculty member (2012-2020)

- **Academic writing**

As faculty member (2015 to present)

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING, University of Thessaly, Volos, Greece

- **Physics I (winter Semester)**

As Adjunct Lecturer (2000)

- **Physics II (spring semester)**

As Adjunct Lecturer (2000)

DEPARTMENT OF MECHANICAL ENGINEERING, University of Thessaly, Volos, Greece

- **Electromagnetism-Optics (2000)**

As Adjunct Lecturer (2000)

DEPARTMENT OF PHYSICS, University of Cyprus, Nicosia, Cyprus

- **Physics for Chemists**
- **General Physics III (Waves, Electromagnetic waves, optics, modern physics)**

As Visiting Professor (2011)

GRADUATE COURSES

2005-2011 University of Thessaly: Department of Civil Engineering, University of Thessaly, Volos, Greece

- **System Theory and Simulation (spring semester),**
- **Applied Mathematics (winter semester)**

- **Linear Algebra and Applications.**

2010-2016 Common Greek-French Master Hydrohazards between University of Thessaly and University Joseph-Fourier Grenoble

- **Teaching at the Risk Course elements of non-linear time-series analysis (In English).**

2017-present Interdepartmental Interinstitutional Graduate Program “Econophysics – Financial Forecasting”

-Teaching the courses

- **“Statistical Physics and Thermodynamic approach to Economy”**
- **“Seminar course Research Methodology”**

2021-present Graduate Program “Applied Physics” Department of Physics

-Teaching the courses

- **“Computational Materials Science” xx**
- **“Advanced data analysis” xxx**
- **“Research Methodology I and II”**

I.6. DIPLOMA THESIS SUPERVISING (20)

I.7. M.SC THESES SUPERVISION (25)

I.8. PH. D. SUPERVISION AND COMMITTEES

Ongoing PhD theses

- Tsoutsoumanos E.” Study of the phenomenological models of induced luminosity in the micro-scale and nanoscale dimensions through simulations in a programming environment, Department of Physics, University of Thessaly
- Papastamatiou K. “Symbolic regression and machine learning with applications in Materials Science and Dynamical Systems”, Department of Physics, University of Thessaly.

- Liosis C. «*Modeling of water purification via chemical reactions and electromagnetic driving of particles*». Dept. of Civil Engineering, University of Thessaly
- Stergiou K. «*Analysis and forecasting of energy resources availability and pricing with advanced time series analysis and machine learning methods*» Dept. of Civil Engineering, University of Thessaly

Supervisor of PhDs successfully defended

- Myrovali G., «C Methodological framework for the recognition and identification of the Dynamics of Road Urban Traffic», Dept. of Civil Engineering, University of Thessaly, July 2020
- Karvelas E. «Magnetic driving of particles in Newtonian and non-Newtonian fluids», *successfully defended, February 2019.*
- Fragkou A. «Detection and characterization of observations correlations of Dynamic Systems with advanced time series analysis methods», *successfully defended, January 2017.*
- Charakopoulos A. «Analysis and identification of spatiotemporal phenomena with the use of advanced Time series analysis methods» *successfully defended, July 2015.*

Member of the Consulting Committee of Phd candidates that have been successfully defended

- Tantos C., Dept. of Mechanical Engineering, University of Thessaly (2016) «Effect of rotational and vibrational degrees of freedom in polyatomic gas heat transfer, flow and adsorption processes far from equilibrium»
- Lemonakis P. Dept. of Civil Engineering, University of Thessaly, « Contributing to the investigation of motorcycle drivers' behavior in curved road sections » (2012)

Member of the Consulting Committee of ongoing Phd candidates

- Tzinava M., Dept Department of Computer Science and Biomedical Informatics, University of Thessaly” Computational methods for simulation, optimization and intelligent quality control of production processes (from 2020)
- Soulikias A. Investigation of the geometric, dimensional and spatio-temporal parameters and the characteristics of the observer in the mathematical expression of the Fundamental Natural Laws, Dept. of Physics, University of Thessaly
- Girgolas A. “Study and Forecast of Economic Indicators with the Use of Non-Linear Dynamics”, Department of Physics, Aristotle University of Thessaloniki, Greece
- Kalogeras D., “Political and Social Culture Strategies in the Teaching of Mathematics”, Department of Electrical and Computer Engineering, University of Peloponnese, Greece.

I.9. PARTICIPATION IN PHD EXAMINATION COMMITTEES

- Kasiteropoulou D. «Methods of Mesoscopic and Macroscopic Simulation of Fluid Motion” *successfully defended*, 2012. Dept. of Civil Engineering, University of Thessaly
- Sofos F. «Numerical Simulation and experimental study of flows in micro and nano-channels” *successfully defended*, 2012. Dept. of Civil Engineering, University of Thessaly
- Pantazis S. «Simulation of transport phenomena in conditions far from thermodynamic equilibrium via kinetic theory with applications in vacuum technology and MEMS” (2011) Dept. of Mechanical Engineering, University of Thessaly.
- Galanis A. «Contributing to the development of a methodology for monitoring and evaluation of road safety and pedestrian mobility in the urban environment» (2011) Dept. of Civil Engineering, University of Thessaly.
- Lemonakis P.. Dept. of Civil Engineering, University of Thessaly, « Contributing to the investigation of motorcycle drivers' behavior in curved road sections » (2012)
- Lycharopoulos I. (2014) «Computational solution of kinetic equation in time varying transport phenomena far from equilibrium» Dept. of Mechanical Engineering, University of Thessaly
- Tantos C. «Effect of rotational and vibrational degrees of freedom in polyatomic gas heat transfer, flow and adsorption processes far from equilibrium” Dept. of Mechanical Engineering, University of Thessaly (2016)
- Gkana A. «Complex Population Dynamics and Economic Repercussions: Predator-Prey Interactions, Infectious Disease Transmission and Solar Magnetic Activity» Department of Economics, University of Thessaly (2016)
- Dimitriadis P., “Hurst-Kolmogorov dynamics in hydroclimatic processes and in the microscale of turbulence”, School of Civil Engineering, National Technical University of Athens (2017)
- Kaloudis K. “Bayesian methods and estimation of nonlinear dynamical system”, Dept. of Mathematics, University of the Aegean, Greece (2019)
- Iacobello G. “Spatio-temporal analysis of wall-bounded turbulence. A multidisciplinary perspective via complex networks “, Doctoral School of Politecnico di Torino, Italy (also served as external reviewer) (2020)

I.10. RESEARCH POSITIONS AND EXPERIENCE

• **30-Sep-88 to 30-Sep-89** Division of Solid State, Physics Department, University of Thessaloniki, Diploma Thesis “Random Walks on perfect and disordered lattices”. Part of the research program “Dynamics of diffusion in disordered solids” funded by VW-Stiftung.

- Development of Monte Carlo simulations in Fortran to study percolation problems.

•**1-Apr-90 to 30-May-92** Section des Recherches de Metallurgie Physique, Nuclear Research Center of Saclay, France.

- Worked on numerical simulation of grain boundaries in metals, dynamical properties of Calcium Fluoride and diffusion properties of oxides.
- Simulations performed on vector and parallel machines of IDRIS (CRAY and IBM Risk clusters) using in-house and personally developed Fortran Codes.

•**1-Jun-92 to 31-Oct-95** Laboratoire de Solides Irradies, Ecole Polytechnique, France, Grain Boundaries, Researcher.

- Molecular Dynamics simulations on vector and parallel machines (CRAY and IBM Risk clusters) using in house and personally developed Fortran Codes.

•**1-Apr-96 to 8-Apr-97** Military Service (obligatory in Greece).

•**1-May-99 to 31-Dec-02** Participation in the European Program COST-F2 «Electrochemical Sensors for flow measurements”.

- Represented the department of Civil Engineering of University of Thessaly in Steering Committee meetings as well as participated in visits for investigation of possible collaborations with experimental teams in France.

•**1-Jul-00 to 30-Jun-01** Senior Researcher in the research project “Development of a parallel processing environment and testing of parallel algorithms”, funded by the Research Committee of University of Thessaly.

Nature of Duties:

- Participation in the writing and realization of the scientific proposal.
- Writing of administrative progress reports as well as technical reports.
- Production of scientific results and preparation of scientific papers for international journals and conferences.
- Design and build a cluster of PCs running Linux and MPI.
- Adapt molecular dynamics code for parallel processing.

•**1-Jan-02 to 31-Dec-02** School of Engineering, Hydrodynamics Laboratory. Postdoctoral Research grant by the National Scholarship Foundation, Greece. “Simulation of liquids using Molecular Dynamics Technique”.

- Writing and materializing the scientific proposal as well as scientific papers for international journals and conferences.
- Preparation of Technical and administrative/financial reports.

•**1-Mar-04 to 31-Dec-08** senior researcher in the program «Analysis and modeling of chaotic behavior in hydraulic systems: from the microscale to macroscale”, funded by the Greek Secretariat of Research and Technology.

(Budget 80.000 Euros)

- Participation in the writing and realization of the scientific proposal.
- Writing of technical and reports as well progress and financial reports of the project.
- Preparation of results and writing of scientific papers for international journals and conferences.

• **1-Nov-05 to 31-Aug-08** Senior researcher in the program “Numerical modeling and experimental study of flows in micro and nano-channels” funded by the Greek Ministry of Development, Greek Secretariat of Research and Technology.

(Budget 120.000 Euros)

- Participation in the writing and realization of the scientific proposal.
- Preparation of technical and financial reports as well as scientific papers for international journals and conferences.
- Co-Direction of two PhD students.

• **1-Jul-08 to 31-Aug-08** Senior Researcher in the Project of the Reform of the Undergraduate Curriculum of the Department of Civil Engineering of the University of Thessaly, Volos, Greece.

- Investigation of the parallel use of simulations and experiments in the teaching of physical sciences.

• **1-Jul-07 to 31-Dec-08** Principal Investigator “Atomistic modeling of oxide interfaces”, Funding University of Thessaly, Research Committee.

- Developed molecular simulations for Si/NiO interfaces, running on a local cluster of 16nodes.

• **1-Sep-11 to 31-Dec-11** Senior Researcher, “Atomistic simulation of peptides”, University of Cyprus.

- Perform analysis of biological molecules from simulations results using CHARMM and NAMD codes and in house developed programs.
- More precisely we have initiated a research collaboration, which aims to elucidate by atomistic MD simulations the structure and interactions of complexes between peptides A β and IAPP, respectively, implicated in the development of Alzheimer’s disease and type-2 diabetes.

• **March-14 to Sep 15** Senior Researcher, “ARISTEIA Project-Fatigue of Materials Used in Vascular Surgery”, University of Thessaly. (Budget 246.000 €).

- Modeling of flows at nano and microscale with applications in blood flow.

•**2020-2021 Principal Investigator**, Project “Magnetic driving of nanoparticles in human arteries’ networks”. Funded by the Ministry of Education in support of young researchers. Responsible for one post-doc and one doctoral student. (Budget 65.000 €)

2021-2023 Senior Researcher, Coordinator of Work Package “Development of physical models for advanced materials and validation through experiments and simulation in a high performance computer environment”, ParICT_CENG, run by the School of Sciences of University of Thessaly and financed by the Region of Central Greece. (Total budget 1.260.000€, work package budget 145.000 €)

03/2022-03/2025 Senior Researcher in project “Multiscale modelling of environmental and free surface flows with particle-based methods (MOVEFREE)”, no. 4584, U.Th. - Brown University, USA, Hellenic Foundation for Research and Innovation

I.11. ADMINISTRATIVE EXPERIENCE

- Deputy Chairman of the Department of Civil Engineering, School of Engineering, University of Thessaly Volos, Greece (academic years 2016-17, 2017-18)
- Coordinator of the Curriculum Committee of the Department of Civil Engineering, School of Engineering, University of Thessaly Volos, Greece (academic years 2016-17, 2017-18)
- Coordinator of the Committee for Doctoral Studies, Department of Civil Engineering, School of Engineering, University of Thessaly Volos, Greece (2018-19)
- Deputy Chairman Department of Physics University of Thessaly (2019-2020)
- Elected Deputy Chairman Department of Physics University of Thessaly (2021-2022)
- Elected Chairman Department of Physics University of Thessaly (2022-2023)
- Representative of the Department of Physics in the Research Committee of the University of Thessaly (2019-present)
- Representative of the Department of Physics in the Senate of University of Thessaly (2022-present)
- Member of the Central Committee for Quality Assurance of University of Thessaly (June 2018-present)
- Representative of the School of Engineering in the Board of School of Continuous and Professional Learning of the University of Thessaly (2018-present)
- Director of the Joint Postgraduate Program “Econophysics-Financial Forecasting” co-organized by the Department of Civil Engineering and the Department of Economics of University of Thessaly and The Department of Physics of the International University of Greece (2017-2020)
- Director of the Postgraduate Program “Applied Physics” organized by the Department of Physics of University of Thessaly (2021 –present)
- Lab Director, Condensed Matter Physics Laboratory Department of Physics, University of Thessaly.
- Responsible of the office of Quality Assurance of Education and Research of the Department of Mechanical Engineering of the University of Thessaly, Volos, Greece. (1-Jul-02 to 01-Jul-05)
- Project Manager in a Project co financed by EU and The Greek Ministry of Education (Operational program "Education", co-financed by the European Social Fund (ESF) and the European Regional Development Fund (ERDF) and national resources) concerning the realization of the Graduate Program of the Department of Mechanical Engineering of the University of Thessaly, Volos, Greece (Budget 500.000 Euro) (1-May-1998 to 31-Aug-2001)
- Project Manager in a Project co financed by EU and The Greek Ministry of Education (Operational program “Education”, co-financed by the European Social Fund (ESF) and the European Regional Development Fund (ERDF) and national resources) concerning the realization of the Reform of the undergraduate Program of the Department of Mechanical Engineering of the University of Thessaly, Volos, Greece (Budget 250.000 Euro) (1-May-1998 to 30-Jun-2000)

I.12. INTERNATIONAL COLLABORATIONS

Erasmus collaboration with University of Strathclyde, UK

Erasmus collaboration with NTNU University, Norway

International Erasmus Collaboration with Nazarbayev University, Kazakhstan

Bilateral visit program with the Interdisciplinary Centre for Advanced Materials Simulation (ICAMS), Ruhr-Universität Bochum, Germany.

I.13. ARTICLE REVIEWER FOR INTERNATIONAL JOURNALS

(representative list)

- Physical Review E
- Physics of Fluids
- MRS Communications
- Scientific Reports
- Computers in Biology and Medicine
- Current Applied Physics
- International Journal for Numerical Methods in Fluids
- International Journal of Emerging Technologies in Learning (iJET)
- International Journal of Heat and Mass Transfer
- Journal of Computational and Applied Mathematics
- Journal of Intelligent and Fuzzy Systems
- Journal of Mathematical Imaging and Vision
- Journal of Physics: Condensed Matter
- Materials Science and Engineering B
- Mechanics of Advanced Materials and Structures
- Modelling and Simulation in Materials Science and Engineering
- Molecular Simulation
- Nanotechnology
- Surface Science
- International Journal of Nanomedicine

I.14. GUEST EDITOR OF SPECIAL VOLUMES

- 1) Guest Editor, Desalination and Water Treatment Journal (Taylor and Francis) Special Issue “Managing water from its source, to the final user (and back to the environment) 2016 Volume 57, Issue 25, 2016
- 2) Guest Editor, Environmental Processes (Springer) (Volume 2, Issue 1 Supplement, November 2015.

- 3) Guest Editor, Fresenius Environmental Bulletin (PSP) Special Issue “Sustainable environmental design, planning, construction and management (under preparation).
- 4) Guest Editor, Computational Materials Science “Advances in Multiscale Materials Modeling” Selected papers from EUROMAT 2017 Conference

I.15. CONFERENCE CHAIRMAN

- Session Chairman: “Computational Physics II”, International Conference of Computational methods in Sciences and Engineering (ICCMSE 2003) Kastoria, Greece 12-16 September 2003
- Session Chairman: “North American - European and South American Symposium on Science and Technology Education, “Science and Technology Literacy on the 21th Century”, May 31 to June 4, 2006, Nicosia, Cyprus
- Chairman in the 1st Fatigue Workshop for Materials Used in Vascular Surgery organized in the frame of the Project FAMAVASU (funded by the program Excellence II), 24-27/2/2015, Volos, Greece.
- Chairman στη 2nd Fatigue Workshop for Materials Used in Vascular Surgery organized in the frame of the Project FAMAVASU (funded by the program Excellence II), 27-4-2015, Thessaloniki, Greece.

I.16. CONFERENCE – SYMPOSIUM ORGANIZING COMMITTEES

- Member of the Local Organizing Committee of the 18th Summer School/Conference "Non Linear Science and Complexity", Volos, 18-30 July 2005
- Member of the scientific committee of the 2nd Educational National Conference «Building the School of Tomorrow», Greek Physical Society, Eretria, Evia, 29-31 January 2010
- Organization (with A. Liakopoulos) of the minisymposium “Atomistic and Hybrid Methodos in Fluid Mechanics” in the frame of the 10th HSTAM International Congress on Mechanics, May 25-27, 2013, Chania, Crete, GREECE

- Member of the organizing committee of the 12th International Conference “Protection and Restoration of the Environment”, Skiathos, Greece, 29 June-3 July 2014
- Member of the Local Organizing Committee of the 8th GRACM International Congress on Computational Mechanics 12th-15th July 2015, University of Thessaly, Volos GREECE
- Member of the Organizing Committee of the 2nd EWaS International Conference: “Efficient & Sustainable Water Systems Management toward Worth Living Development” June 1-4 2016 Chania, Crete, Greece.
- Member of the Local Scientific Committee in the 23rd International Congress on Sound and Vibration (ICSV23), 10-14 July 2016, Athens Greece
- Session Chairman in the 23rd International Congress on Sound and Vibration (ICSV23), 10-14 July 2016, Athens Greece
- President of the Organizing Committee of the 24th Summer Scholl Conference “Dynamical Systems and Complexity”, Volos 12-21 July 2017
- Co-organization of the symposium “Multiscale Materials Modeling” in the frame of the International Conference EUROMAT2017, Thessaloniki, September 17-22/9/2017
- Program Committee member of EDUCON2017 (IEEE Gobal Engineering Education Conference) 25-28 April 2017, Athens, Greece
- Member of the organizing committee of the 3rd Econophysics International Conference, Volos, 28-30 September 2017
- Programme Committee member International Conference Complex Systems 2018, 23-28 September, Thessaloniki, Greece
- Member of the Organizing Committee of the 27th Summer School Conference “Dynamical Systems and Complexity”, Athens 18-16 July 2021
- Member of the Organizing Committee of the 28th Summer School Conference “Dynamical Systems and Complexity”, Chania 18-16 July 2022

- **Invited speaker**
- Workshop Computational Materials Science, organized by the Hellenic Society for the Science and Technology of Condensed Matter under the auspices of the School of Physics of the Aristotle University of Thessaloniki on December 14 & 15, 2019 at the Faculty of Sciences.

I.17. PROPOSAL EVALUATOR

- Evaluator for the Greek General Secretariat of Research
- Evaluator for the Hellenic Foundation for Research and Innovation
- Member of the National Committee of Evaluation in the domain of Nanotechnology for bilateral proposals of the Greek General Secretariat of Research.
- Evaluator for King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia
- Evaluator for the Czech Science Foundation

I.18. DISTINCTIONS OF PAPERS

1) The paper

Georgiou, D.N., Karakasidis, T.E., Nieto, J.J., Torres, A., Use of fuzzy clustering technique and matrices to classify amino acids and its impact to Chou's pseudo amino acid composition
Journal of Theoretical Biology, 257, 17 (2009)

Was among the 5 Top-cited papers that were published in the *Journal of Theoretical Biology* during 2009-2013.

2) The paper

T.E. Karakasidis and C.A. Charitidis, "Multiscale modeling in nanomaterials science",
Materials Science & Engineering C 27, 1082 (2007)

was among the 25 Top downloaded papers of the journal

3) The paper

“An Optimized Method for 3D Magnetic Navigation of Nanoparticles inside Human Arteries”by

E. Karvelas, C. Liosis, A. Theodorakakos, T. Karakasidis

that was presented in INTERNATIONAL RESEARCH CONFERENCE- ICDDNBEA 2021 : XV.

International Conference on Drug Delivery Nanosystems for Biomedical Engineering Applications has been selected as the best paper

I.19. COMPUTER SKILLS

- Certified trainer for teaching basic ICT skills to adults based on experience and after following a special course on adult learning and course design from the National Organisation for Accreditation of Qualifications & Vocational Guidance (Greece)

- **General skills**

- Very good knowledge of Microsoft office
- Internet and email

Teaching Software

- Blackboard, Webct, E-Class, Banner
- Seminar in the use of Interactive boards

Scientific computing related

- Large experience in development and optimization of FORTRAN programs.
- Experience in C programming
- Good Knowledge of Parallel Programming using the MPI/MPICH protocol under Linux.
- Very good knowledge of operating systems UNIX, LINUX, Windows.
- Matlab

I.20. LANGUAGES

English : Excellent

French : Excellent

German: Basic

Greek: Mother tongue

I.21. SOCIETY MEMBERSHIPS

- American Physical Society
- European Physical Society
- Materials Research Society
- IEEE Computer Society
- American Nano Society

Science popularization

- 1) In 2017 I organized a team of five undergraduate students (three female student and two male students) of the Department of Civil Engineering of University of Thessaly for participation in the FameLab Competition. One of them (Doxa Psychogiou) managed to be selected among the ten Greek finalists and one as runner-up (Ioanna Skyrianou)
- 2) Science presentations in schools
- 3) I wrote a book for science popularization “Roulis the Science Cat” printed in 2015, the hero being a cat leaving with a science professor and discussing science with other animals.

I.22. SCIENTIFIC PUBLICATIONS

A. THESES

- A1.** «Molecular Dynamics Simulation of Diffusion and Grain Boundaries in ionic compounds», Ph.D Thesis, University Pierre et Marie Curie (PARIS 6), Paris France, (1995). (in French)
- A2.** «Study of Dynamical Properties of Calcium Fluoride by Computer Simulations», Master Thesis, University Pierre et Marie Curie (PARIS 6), Paris France,, (1991). (in French)
- A3.** «Correlated random walks on perfect and disordered lattices», Diploma Thesis, Department of Physics, Aristotle University of Thessaloniki, Greece (1989).
- A4.** «Investigation of the use of virtual and Remote labs in the distant learning of physical sciences in Higher Education» Master Thesis in Education, Greek Open University, Greece (2009) (in Greek)

B. PUBLICATIONS IN INTERNATIONAL PEER REVIEWED JOURNALS

- B1.** A Charakopoulos, T Karakasidis, Backward Degree a new index for online and offline change point detection based on complex network analysis, *Physica A*: 604, 127929 <https://doi.org/10.1016/j.physa.2022.127929>
- B2.** Z Ullah, M Ashraf, IE Sarris, TE Karakasidis, The Impact of Reduced Gravity on Oscillatory Mixed Convective Heat Transfer around a Non-Conducting Heated Circular Cylinder, *Applied Sciences* 12 (10), 5081, <https://doi.org/10.3390/app12105081>
- B3.** T Maranna, KN Sneha, US Mahabaleshwar, IE Sarris, **TE Karakasidis**, An Effect of Radiation and MHD Newtonian Fluid over a Stretching/Shrinking Sheet with CNTs and Mass Transpiration, *Applied Sciences* 12 (11), 5466, <https://doi.org/10.3390/app12115466>
- B4.** F Sofos, A Charakopoulos, K Papastamatiou, TE Karakasidis, A combined clustering/symbolic regression framework for fluid property prediction, *Physics of Fluids*, 34, 062004 (2022) <https://doi.org/10.1063/5.0096669>
- B5.** AD Fragkou, I Andreadis, **TE Karakasidis**, The Visual Boundary Recurrence Plot: A Closer Look into the Dynamics of Recurrence Plots, *International Journal of Bifurcation and Chaos* 32 (09), 2250131, <https://doi.org/10.1142/S0218127422501310>
- B6.** EG Karvelas, NK Lampropoulos, **TE Karakasidis**, IE Sarris, Blood flow and diameter effect in the navigation process of magnetic nanocarriers inside the carotid artery, *Computer*

- Methods and Programs in Biomedicine*, 106916 (2022)
<https://doi.org/10.1016/j.cmpb.2022.106916>
- B7.** C Liosis, G Sofiadis, E Karvelas, **T Karakasidis**, I Sarris, A Tesla Valve as a Micromixer for Fe₃O₄ Nanoparticles, *Processes* 10 (8), 1648 <https://doi.org/10.3390/pr10081648>
- B8.** F Sofos, A Charakopoulos, K Papastamatiou, **TE Karakasidis**, A combined clustering/symbolic regression framework for fluid property prediction, *Physics of Fluids* (2022) <https://doi.org/10.1063/5.0096669>
- B9.** C Liosis, E Karvelas, T Karakasidis, I Sarris, Mixing of Fe₃O₄ nanoparticles under electromagnetic and shear conditions for wastewater treatment applications, *Journal of Water Supply: Research and Technology-Aqua* (2022)
<https://doi.org/10.2166/aqua.2022.080>
- B10.** Sofos, F., Stavrogiannis, C., Exarchou-Kouveli, K. K., Akabua, D., Charilas, G., & **Karakasidis, T. E.** (2022). Current Trends in Fluid Research in the Era of Artificial Intelligence: A Review. *Fluids*, 7(3), 116. <https://doi.org/10.3390/fluids7030116>
- B11.** Papastamatiou, K., Sofos, F., & **Karakasidis, T. E.** (2022). Machine learning symbolic equations for diffusion with physics-based descriptions. *AIP Advances*, 12(2), 025004. <https://doi.org/10.1063/5.0082147>
- B12.** Zaitouny, A., Fragkou, A. D., Stemler, T., Walker, D. M., Sun, Y., **Karakasidis, T.**, Nathanail E. & Small, M. (2022). Multiple sensors data integration for traffic incident detection using the quadrant scan. *Sensors*, 22(8), 2933. <https://doi.org/10.3390/s22082933>
- B13.** Sofos, F., **Karakasidis, T. E.**, & Sarris, I. E. (2022). Effects of channel size, wall wettability, and electric field strength on ion removal from water in nanochannels. *Scientific reports*, 12(1), 1-12. <https://doi.org/10.1038/s41598-021-04620-x>
- B14.** Tsoutsoumanos, E., Konstantinidis, P. G., Polymeris, G. S., **Karakasidis, T.**, & Kitis, G. (2022). Electron trap filling and emptying through simulations: Studying the shift of the maximum intensity position in Thermoluminescence and Linearly Modulated Optically Stimulated Luminescence curves. *Radiation Measurements*, 153, 106735. <https://doi.org/10.1016/j.radmeas.2022.106735>
- B15.** Papastamatiou, K., & **Karakasidis, T.** (2022). Bubble detection in Greek Stock Market: A DS-LPPLS model approach. *Physica A: Statistical Mechanics and its Applications*, 587, 126533. <https://doi.org/10.1016/j.physa.2021.126533>

- B16.** Fragkou, A., Charakopoulos, A., **Karakasidis, T.**, & Liakopoulos, A. (2022). Non-Linear Analysis of River System Dynamics Using Recurrence Quantification Analysis. *AppliedMath*, 2(1), 1-15. <https://doi.org/10.3390/appliedmath2010001>
- B17.** Sofos F., **Karakasidis, T.**, (2021) “Nanoscale slip length prediction with machine learning tools, *Scientific Reports*, **11**, 12520 <https://doi.org/10.1038/s41598-021-91885-x>
- B18.** Stergiou, K; **Karakasidis T.**; (2021) “Application of deep learning and chaos theory for load forecasting in Greece”, *Neural Computing and Applications*, **33**, pages 16713–16731 (2021) <https://doi.org/10.1007/s00521-021-06266-2>
- B19.** Karvelas E., Liosis C, Theodorakakos A., Sarris I, **Karakasidis T.**, (2021) “An Optimized Method for 3D Magnetic Navigation of Nanoparticles inside Human Arteries”, *Fluids*, **6**(3), 97; <https://doi.org/10.3390/fluids6030097>
- B20.** Sofos, F., **Karakasidis, T.** (2021) “Machine Learning Techniques for Fluid Flows at the Nanoscale”, *Fluids*, 6(3), 96; <https://doi.org/10.3390/fluids6030096>
- B21.** Lemonakis P., Eliou N., **Karakasidis T.** (2021) “Investigation of speed and trajectory of motorcycle riders at curved road sections of two-lane rural roads under diverse lighting conditions”, *Journal of Safety Research*. 78, 138-145 <https://doi.org/10.1016/j.jsr.2021.05.009>
- B22.** Katsarou E., Katsafadou, A.; **Karakasidis T.**, Chatzopoulos, D.; Vasileiou, N.; Lianou, D.; Mavrogianni, V.; Petinaki, E.; Fthenakis G., (2021) “Growth of Staphylococcus epidermidis on the Surface of Teatcups from Milking Parlours”, *Microorganisms*, **9**(4), 852; <https://doi.org/10.3390/microorganisms9040852>
- B23.** Charakopoulos, A., **Karakasidis, T.**, Sarris, I. (2021) “Analysis of magnetohydrodynamic channel flow through complex network analysis”, *Chaos* **31**, 043123 <https://doi.org/10.1063/5.0043817>
- B24.** Myrovali, G., **Karakasidis, T.**, Morfoulaki, M., Ayfantopoulou, G. (2021) “Representativeness of Taxi GPS-Enabled Travel Time Data Using Gamma Generalized Linear Model”, *International Journal of Decision Support System Technology (IJDSST)*, 13(3), 36-53. <https://doi:10.4018/IJDSST.2021070103>
- B25.** Sofos F., **Karakasidis T.**, Sarris I., (2020) “Molecular Dynamics Simulations of Ion Drift in Nanochannel Water Flow”, *Nanomaterials*, **10**, 2373, <https://doi:10.3390/nano10122373>
- B26.** Andreadis I., Fragkou A., **Karakasidis, T.** (2020) “On a topological criterion to select a recurrence threshold”, *Chaos*, **30**, 013124 <https://doi.org/10.1063/1.5116766>

- B27.** Liosis, C., Karvelas, E., Karakasidis T., Sarris, I. (2020) "Numerical study of magnetic particles mixing in waste water under an external magnetic field", *Journal of Water Supply: Research and Technology-Aqua*, **69**(3), 266-275 <https://doi.org/10.2166/aqua.2020.090>
- B28.** Karvelas, E., Liosis, C., Karakasidis, T., Sarris, I., (2020) "Micromixing Nanoparticles and Contaminated Water Under Different Velocities for Optimum Heavy Metal Ions Adsorption", *Environmental Sciences Proceedings*, **2**(1), 65; <https://doi.org/10.3390/environsciproc2020002065>
- B29.** Karvelas, E; Lampropoulos, N; Benos, L; Karakasidis, T; Sarris, IE; (2020) "On the magnetic aggregation of Fe₃O₄ nanoparticles", *Computer Methods and Programs in Biomedicine*, **198**, 105778. <https://doi.org/10.1016/j.cmpb.2020.105778>
- B30.** Karakasidis, T., Andreadis, I., Fragkou, A., (2019) "On a topological classification of recurrence plots: Application to noise perturbed molecular dynamics time series", *Chaos*, **29**, 023113 <https://doi.org/10.1063/1.5054396>
- B31.** Fragkou, AD; Karakasidis, TE; Sarris, IE; (2019) "Recurrence quantification analysis of MHD turbulent channel flow", *Physica A*, **531**, 121741 <https://doi.org/10.1016/j.physa.2019.121741>
- B32.** Charakopoulos, A., Karakasidis, T., Sarris, I., (2019) "Pattern identification for wind power forecasting via complex network and recurrence plot time series analysis", *Energy Policy*, **133**, 110934, <https://doi.org/10.1016/j.enpol.2019.110934>
- B33.** Sofos F., Liakopoulos A., Karakasidis T., (2019) "Particle-based modeling and meshless simulation of flows with smoothed particle hydrodynamics", *Global NEST Journal*, Vol 21, No 4, pp 513-518 <https://doi.org/10.30955/gnj.003052>
- B34.** Sofos, F., Karakasidis, T. E., & Spetsiotis, D. (2019). "Molecular dynamics simulations of ion separation in nano-channel water flows using an electric field". *Molecular Simulation*, **45**(17), 1395-1402. <https://doi.org/10.1080/08927022.2019.1637520>
- B35.** A.D. Fragkou, T.E. Karakasidis, I.E. Sarris, (2019) "Recurrence quantification analysis of MHD turbulent channel flow", *Physica A*, **531**, 121741, <https://doi.org/10.1016/j.physa.2019.121741>
- B36.** E Karvelas, C Liosis, L Benos, T Karakasidis, I Sarris, (2019) "Micromixing Efficiency of Particles in Heavy Metal Removal Processes under Various Inlet Conditions", *Water* **11** (6), 1135 <https://doi.org/10.3390/w11061135>

- B37.** Karakasidis, T. E., Andreadis, I., & Fragkou, A. D. (2019). "On a topological classification of recurrence plots: Application to noise perturbed molecular dynamics time series". *Chaos*, 29(2), 023113. <https://doi.org/10.1063/1.5054396>
- B38.** Charakopoulos, A.K., Katsouli, G.A., Karakasidis, T.E., (2018) "Dynamics and causalities of atmospheric and oceanic data identified by complex networks and Granger causality analysis", *Physica A: Statistical Mechanics and its Applications*, 495, pp. 436-453, <https://doi.org/10.1016/j.physa.2017.12.027>
- B39.** Fragkou A.D., T.E. Karakasidis and E. Nathanail, (2018) "Detection of traffic incidents using Nonlinear Time series analysis", *Chaos*, 28(6), 063108. <https://doi.org/10.1063/1.5024924>
- B40.** D. Spetsiotis, F. Sofos, D. Kassiteropoulou, T.E. Karakasidis, Liakopoulos A, (2018) "Multi-parameter analysis of water flows in nanochannels", *Desalination and Water Treatment*, 125, 8-15, <https://doi.org/10.5004/dwt.2018.22961>
- B41.** E. Karvelas, T. Karakasidis, I. Sarris, (2018) "Computational analysis of paramagnetic spherical Fe₃O₄ nanoparticles under permanent magnetic fields", *Computational Materials Science*, 154, 464-471. <https://doi.org/10.1016/j.commatsci.2018.07.047>
- B42.** Liakopoulos, A., Sofos, F., Karakasidis, T.E., (2017) "Darcy-Weisbach friction factor at the nanoscale: From atomistic calculations to continuum models", *Physics of Fluids*, 29 (5), art. no. 052003, <https://doi.org/10.1063/1.4982667>
- B43.** Karvelas, E.G., Lampropoulos, N.K., Papadimitriou, D.I., Karakasidis, T.E., Sarris, I.E., (2017) "Computational study of the effect of gradient magnetic field in navigation of spherical particles", *Journal of Physics: Conference Series*, 931 (1), art. no. 012014, <https://doi.org/10.1088/1742-6596/931/1/012014>
- B44.** E. Karvelas, N. Lampropoulos, T. Karakasidis, I. Sarris, (2017) "A computational tool for the estimation of the optimum gradient magnetic field for the magnetic driving of the spherical particles in the process of cleaning water", *Desalination and Water Treatment*, 99, 27-33 <https://doi.org/10.5004/dwt.2017.21545>
- B45.** Sofos, F., Karakasidis, T.E., Giannakopoulos, A.E., Liakopoulos, A., (2016) "Molecular dynamics simulation on flows in nano-ribbed and nano-grooved channels", *Heat and Mass Transfer*, 52 (1), pp. 153-162. <https://doi.org/10.1007/s00231-015-1601-8>

- B46.** Liakopoulos, A., Sofos, F., Karakasidis, T.E., (2016) "Friction factor in nanochannel flows", *Microfluidics and Nanofluidics*, 20, 24, <https://doi.org/10.1007/s10404-015-1699-5>
- B47.** Sofos, F., Karakasidis, T.E., Liakopoulos, A. (2016) Fluid structure and system dynamics in nanodevices for water desalination", *Desalination and Water Treatment*, 57 (25), pp. 11561-11571. <https://doi.org/10.1080/19443994.2015.1049966>
- B48.** Kasiteropoulou, D., Karakasidis, T., Liakopoulos, A. (2016) "Study of fluid flow in grooved micro and nano-channels via dissipative particle dynamic: A tool for desalination membrane design", *Desalination and Water Treatment*, 57 (25), 11675-11684. <https://doi.org/10.1080/19443994.2016.1141118>
- B49.** Karvelas, E.G., Lampropoulos, N.K., Karakasidis, T.E., Sarris, I.E. (2016), "Computational Study of the Optimum Gradient Magnetic Field for the Navigation of the Spherical Particles in the Process of Cleaning the Water from Heavy Metals", *Procedia Engineering*, 162, pp. 77-82. <https://doi.org/10.1016/j.proeng.2016.11.017>
- B50.** Kefou, N., Karvelas, E., Karamanos, K., Karakasidis, T., Sarris, I.E., (2016) "Water Purification in Micromagnetofluidic Devices: Mixing in MHD Micromixers", *Procedia Engineering*, 162, pp. 593-600. <https://doi.org/10.1016/j.proeng.2016.11.105>
- B51.** Georgiou, D.N., Karakasidis, T.E., Megaritis, A.C., Nieto, J.J., Torres, A., (2015) "An extension of fuzzy topological approach for comparison of genetic sequences", *Journal of Intelligent and Fuzzy Systems*, 29 (5). 2259-2269. <https://doi.org/10.3233/IFS-151701>
- B52.** Andreadis, I., Karakasidis, T.E., (2015) "On a numerical approximation of the boundary structure and of the area of the Mandelbrot set", *Nonlinear Dynamics*, 80 (1-2), pp. 929-935. <https://doi.org/10.1007/s11071-015-1917-4>
- B53.** Fragkou, A.D., Karakasidis, T.E., Sarris, I.E., Liakopoulos, A., (2015) "Spatiotemporal Time Series Analysis Methods for the Study of Turbulent Magnetohydrodynamic Channel Flows", *Environmental Processes*, 2, pp. S141-S158. <https://doi.org/10.1007/s40710-015-0095-1>
- B54.** Charakopoulos, A.K., Karakasidis, T.E., Liakopoulos, A., (2015) "Spatiotemporal Analysis of Seawatch Buoy Meteorological Observations", *Environmental Processes*, 2, pp. S23-S39, <https://doi.org/10.1007/s40710-015-0088-0>

- B55.** A. Charakopoulos, **T.E. Karakasidis**, P. Papanicolaou, A. Liakopoulos, (2014) “The application of complex network time series analysis in turbulent heated jets”, *Chaos* 24, 024408 (2014); <https://doi.org/10.1063/1.4875040>
- B56.** A.E. Giannakopoulos, F. Sofos, **T.E. Karakasidis**, A. Liakopoulos, (2014) “A quasi-continuum multi-scale theory for self-diffusion and fluid ordering in nanochannel flows”, *Microfluidics Nanofluidics* 17(6) 1011-1023, <https://doi.org/10.1007/s10404-014-1390-2>
- B57.** A. Charakopoulos, **T.E. Karakasidis**, P. Papanicolaou, A. Liakopoulos, (2014) “Non-linear time series analysis and clustering for jet axis identification in vertical turbulent heated jets”, *Physical Review E*, 89, 032913 <https://doi.org/10.1103/PhysRevE.89.032913>
- B58.** F. Sofos, **T. Karakasidis** and A. Liakopoulos, (2013) “Fluid Flow at the Nanoscale: How Fluid Properties Deviate from the Bulk”, *Nanoscience and Nanotechnology Letters* 5, 1–4. <https://doi.org/10.1166/nnl.2013.1555>
- B59.** F. Sofos, **T. Karakasidis** and A. Liakopoulos, (2013) “Parameters Affecting Slip Length at the Nanoscale”, *Journal of Computational and Theoretical Nanoscience*, 10, 1–3. <https://doi.org/10.1166/jctn.2013.2749>
- B60.** D. Kasiteropoulou, **T.E. Karakasidis**, A. Liakopoulos, (2013) “Mesoscopic simulation of fluid flow in periodically grooved microchannels”, *Computers and Fluids*, 74, 91–101. <https://doi.org/10.1016/j.compfluid.2013.01.010>
- B61.** F Sofos, **TE Karakasidis**, A Liakopoulos, (2013) “How wall properties control diffusion in grooved nanochannels: a molecular dynamics study”, *Heat and Mass Transfer*, 49(8), 1081-1088. <https://doi.org/10.1007/s00231-013-1152-9>
- B62.** I Andreadis, **TE Karakasidis**, “On numerical approximations of the area of the generalized Mandelbrot sets”, *Applied Mathematics and Computation* 219 (23), 10974-10982 <https://doi.org/10.1016/j.amc.2013.04.052>
- B63.** PV Lemonakis, NE Eliou, GN Botzoris, **TE Karakasidis**, (2014) “Contribution to the Investigation of Motorcyclists’ Speed Prediction Equations for Two-Lane Rural Roads”, *Journal of Transportation Technologies* 3, 204-213 DOI: [10.4236/jtts.2013.33021](https://doi.org/10.4236/jtts.2013.33021)
- B64.** Lemonakis, P.V., Eliou, N.E., **Karakasidis, T.** Botzoris, G., (2014) “A new methodology for approaching motorcycle riders’ behavior at curved road sections”, *J European Transport Research Review*, 6, 303–314 <https://doi.org/10.1007/s12544-014-0132-6>

- B65.** D.N.Georgiou, **T.E. Karakasidis**, A.C.Megaritis, (2013) "A Short Survey on Genetic Sequences, Chou's Pseudo Amino Acid Composition and its Combination with Fuzzy Set Theory", *The Open Bioinformatics Journal* 7, (Supp-1, M4) 41-48 DOI: [10.2174/1875036201307010041](https://doi.org/10.2174/1875036201307010041)
- B66.** A. Charakopoulos, **T.E. Karakasidis**, P.N. Papanicolaou, (2012) "Detection of jet axis in a horizontal turbulent jet via nonlinear analysis of minimum/maximum temperature time series", *Chaotic Modeling and Simulation CMSIM* 1: 205-217.
- B67.** F. Sofos, **T.E. Karakasidis** and A. Liakopoulos, (2012) "Surface wettability effects on flow in rough wall nanochannels", *Microfluidics Nanofluidics*, 12, pp 25-31 <https://doi.org/10.1007/s10404-011-0845-y>
- B68.** I. Andreadis, **T. E. Karakasidis**: (2012) "On a Closeness of the Julia Sets of noise-perturbed Complex quadratic Maps", *International Journal of Bifurcation and Chaos* 22, 1250221 <https://doi.org/10.1142/S0218127412502215>
- B69.** A.E. Giannakopoulos, F. Sofos, **T.E. Karakasidis**, A. Liakopoulos, (2012) "Unified description of size effects of transport properties of liquids flowing in nanochannels", *International Journal of Heat and Mass Transfer*, 55, pp. 5087–5092 <https://doi.org/10.1016/j.ijheatmasstransfer.2012.05.008>
- B70.** **Karakasidis, T.E.**, Georgiou, D.N., Nieto, J.J. (2012) "Fuzzy regression analysis: An application on tensile strength of materials and hardness scales", *Journal of Intelligent and Fuzzy Systems*, 23, 177-186
- B71.** D. Kasiteropoulou, **T. Karakasidis**, A. Liakopoulos,(2012) "A Dissipative Particle Dynamics study of flow in periodically grooved nanochannels", *Journal of Numerical methods in Fluids* 68, 1156-1172, <https://doi.org/10.1002/flid.2599>
- B72.** **T.E. Karakasidis**, C.A. Charitidis, (2011) "Influence of nano-inclusions' grain boundaries on crack propagation modes in materials", *Materials Science and Engineering: B*, 176(6), pp. 490-493 <https://doi.org/10.1016/j.mseb.2010.04.013>
- B73.** Andreadis, I., **Karakasidis, T.E.**, (2010) "On a topological closeness of perturbed Mandelbrot sets", *Applied Mathematics and Computation* 215, pp. 3674-3683. <https://doi.org/10.1016/j.amc.2009.11.006>

- B74.** F. Sofos, **T. Karakasidis**, A. Liakopoulos, (2010) "Effect of wall roughness on shear viscosity and diffusion in nanochannels", *International Journal of Heat and Mass Transfer*, 53, pp. 3839-3846. <https://doi.org/10.1016/j.ijheatmasstransfer.2010.04.037>
- B75.** I. Andreadis, **T. Karakasidis**, (2010) "On a topological closeness of perturbed Julia sets", *Applied Mathematics and Computation*, 217(6), pp. 2883-2890. <https://doi.org/10.1016/j.amc.2010.08.024>
- B76.** D.N. Georgiou, **T.E. Karakasidis**, Juan J. Nieto, A. Torres, (2010) "A study of entropy/clarity of genetic sequences using metric spaces and fuzzy sets", *Journal of Theoretical Biology*, 267(1), pp 95-105. <https://doi.org/10.1016/j.jtbi.2010.08.010>
- B77.** F. Sofos, **T. E. Karakasidis**, A. Liakopoulos, (2010) "Effect of wall roughness on shear viscosity and diffusion in nanochannels", *International Journal of Heat & Mass Transfer*, 53, pp. 3839-3846. <https://doi.org/10.1016/j.ijheatmasstransfer.2010.04.037>
- B78.** Andreadis I., **Karakasidis T.E.**, (2009) "On probabilistic Mandelbrot maps", *Chaos, Solitons and Fractals*, 42 (3), 1577-1583 <https://doi.org/10.1016/j.chaos.2009.03.033>
- B79.** F. Sofos, **T. Karakasidis**, A. Liakopoulos, (2009) "Transport properties of liquid argon in krypton nanochannels: Anisotropy and non-homogeneity introduced by the solid walls", *International Journal of Heat and Mass Transfer* 52, 735. <https://doi.org/10.1016/j.ijheatmasstransfer.2008.07.022>
- B80.** F. Sofos, **T. Karakasidis**, A. Liakopoulos, (2009) "Effects of wall roughness on flow in nanochannels", *Physical Review E* 79, 026305. <https://doi.org/10.1103/PhysRevE.79.026305>
- B81.** F. Sofos, **T. Karakasidis**, A. Liakopoulos, (2009) "Non-Equilibrium Molecular Dynamics investigation of parameters affecting planar nanochannel flows" *Contemporary Engineering Sciences* 2, 283.
- B82.** Andreadis, I., **Karakasidis, T.E.**, (2009) "On probabilistic Mandelbrot maps", *Chaos, Solitons and Fractals*, 42 1577. <https://doi.org/10.1016/j.chaos.2009.03.033>
- B83.** **T.E. Karakasidis**, A. Liakopoulos, A. Fragkou, P. Papanicolaou, (2009) "Recurrence Quantification Analysis of Temperature Fluctuations in a Horizontal Round Heated Jet", *International Journal of Bifurcation and Chaos* 19, 2487. <https://doi.org/10.1142/S0218127409024268>

- B84.** Georgiou, D.N., Karakasidis, T.E., Nieto, J.J., Torres (2009), A., "Use of fuzzy clustering technique and matrices to classify amino acids and its impact to Chou's pseudo amino acid composition", *Journal of Theoretical Biology*, 257, 17.
<https://doi.org/10.1016/j.jtbi.2008.11.003>
- B85.** D. Vavougios, T. Karakasidis, (2008) "Application of ICT technology in physics education: teaching and learning elementary oscillations with the aid of simulation software", *International Journal of Emerging Technologies in Learning*, 3, 53.
<https://online-journals.org/index.php/i-jet/article/view/204>
- B86.** T.E. Karakasidis, A. Charakopoulos, (2008) "Detection of low-dimensional chaos in wind time series", *Chaos, Solitons and Fractals*, 41(4), 1723-1732.
- B87.** T.E. Karakasidis and C.A. Charitidis, (2007) "Multiscale modeling in nanomaterials science", *Materials Science & Engineering C* 27, 1082.
<https://doi.org/10.1016/j.msec.2006.06.029>
- B88.** C. Charitidis, T.E. Karakasidis, P. Kavouras, Th. Karakostas, (2007) "Size effect of crystalline inclusions on the fracture modes in glass-ceramic materials", *Journal of Physics Condensed Matter* 19, 266209. <https://doi.org/10.1088/0953-8984/19/26/266209>
- B89.** T.E. Karakasidis, A. Fragkou, A. Liakopoulos (2007) "System dynamics revealed by recurrence quantification analysis: Application to molecular dynamics simulations", *Physical Review E* 76, 021120. <https://doi.org/10.1103/PhysRevE.76.021120>
- B90.** T.E. Karakasidis, C.A. Charitidis, D. Skarakis, F. Chouliaras, (2007) "Elastic properties of nanostructured materials with layered grain boundary structure", *Surface Science* 601, 3521. <https://doi.org/10.1016/j.susc.2007.06.066>
- B91.** T.E. Karakasidis and E. Vamvakopoulos (2006) "Ni³⁺ adsorbate dynamics on a NiO (001) surface", *Surface Science* 600, 1952. <https://doi.org/10.1016/j.susc.2006.02.024>
- B92.** T.E. Karakasidis, (2006) "Vibrational and topological properties of selected NiO surfaces", *Surface Science* 600, 4089. <https://doi.org/10.1016/j.susc.2006.01.126>
- B93.** J.J. Nieto, A. Torres, D.N. Georgiou, T.E. Karakasidis, (2006) "Fuzzy Polynucleotide Spaces and Metrics" *Bulletin of Mathematical Biology* 68, 703.
<https://doi.org/10.1007/s11538-005-9020-5>

- B94.** T.E. Karakasidis, N.S. Cholevas, A.L. Liakopoulos, (2005) "Parallel Short Range Molecular Dynamics Simulations on Computer Clusters: Performance Evaluation and Modeling", *Mathematical and Computer Modelling*, 42, 783.
<https://doi.org/10.1016/j.mcm.2005.09.007>
- B95.** T.E. Karakasidis and D.N. Georgiou, (2004) "Partitioning elements of the Periodic Table via fuzzy clustering technique", *Soft Computing* 8, 231.
<https://doi.org/10.1007/s00500-003-0301-3>
- B96.** T.E. Karakasidis and A.B. Liakopoulos, (2004) "Two regime dynamical behaviour in Lennard-Jones Systems: Spectral and rescaled range analysis", *Physica A: Statistical Mechanics and its Applications* 333, 225. <https://doi.org/10.1016/j.physa.2003.11.001>
- B97.** I.A. Andreadis and T.E. Karakasidis, (2004) "Noise perturbation of the thermostat in constant temperature molecular dynamics simulations", *Chaos, Solitons & Fractals*, 20, 1165. <https://doi.org/10.1016/j.chaos.2003.09.013>
- B98.** T.E. Karakasidis, I. Andreadis, (2003) "A homogeneous random fractal model for time series produced by constant energy molecular dynamics simulations", *Chaos Solitons and Fractals*, 15, 87. [https://doi.org/10.1016/S0960-0779\(02\)00111-X](https://doi.org/10.1016/S0960-0779(02)00111-X)
- B99.** T.E. Karakasidis, (2002) "Vibrational properties of a $\Sigma 5(310)[001]$ NiO grain boundary as a function of temperature: A molecular dynamics study", *Computer Physics Communications* 147, 198. [https://doi.org/10.1016/S0010-4655\(02\)00383-1](https://doi.org/10.1016/S0010-4655(02)00383-1)
- B100.** D.G. Papageorgiou, T.E. Karakasidis and G.A. Evangelakis, (2002) "Oxygen adatom diffusion on the NiO(001) surface by molecular dynamics simulation", *Physica B*, 318, 211.
[https://doi.org/10.1016/S0921-4526\(02\)00517-3](https://doi.org/10.1016/S0921-4526(02)00517-3)
- B101.** T.E. Karakasidis, (2002) "Vibrational Properties of a $\Sigma 5(310)[001]$ NiO grain boundary: a local analysis by molecular dynamics simulation", *Surface Science*, 515, 1.
[https://doi.org/10.1016/S0039-6028\(02\)01919-2](https://doi.org/10.1016/S0039-6028(02)01919-2)
- B102.** J. Argyris, T.E. Karakasidis and I. Andreadis, (2002) "On the Julia sets of a noise perturbed Mandelbrot map", *Chaos, Solitons and Fractals* 13, 245.
[https://doi.org/10.1016/S0960-0779\(00\)00257-5](https://doi.org/10.1016/S0960-0779(00)00257-5)
- B103.** T.E. Karakasidis and I. Andreadis, (2002) "A fractional Brownian Motion model for time series produced by constant temperature molecular dynamics simulations", *International*

<https://doi.org/10.1142/S0218127402004383>

- B104. T.E. Karakasidis**, D.G. Papageorgiou G.A. Evangelakis, (2001) "Molecular dynamics study of the Ni^{+2} adatom diffusion on the NiO(001) surface", *Defects and Diffusion Forum* 194-199, 1387. <https://doi.org/10.4028/www.scientific.net/DDF.194-199.1387>
- B105. P. Samaras**, A. Kungolos, **T. Karakasidis**, D. Georgiou and K. Perakis, (2001) "Statistical evaluation of PCDD/F emission data during solid waste combustion by fuzzy clustering techniques", *Journal of Environmental Science and Health – Part A* 36, 153. <https://doi.org/10.1081/ESE-100102614>
- B106. T.E. Karakasidis**, D.G. Papageorgiou and G.A. Evangelakis, (2001) "Cation adatom diffusion on the NiO(001) surface by molecular dynamics simulation", *Surface Science* 486, 46 [https://doi.org/10.1016/S0039-6028\(01\)01063-9](https://doi.org/10.1016/S0039-6028(01)01063-9)
- B107. T. Karakasidis**, D. Papageorgiou and G. Evangelakis, (2000) "Structure and dynamics of NiO(001) and Ni/NiO(001) surfaces by molecular dynamics simulation", *Applied Surface Science* 162-163, 233. [https://doi.org/10.1016/S0169-4332\(00\)00197-5](https://doi.org/10.1016/S0169-4332(00)00197-5)
- B108. T.E. Karakasidis** and M. Meyer, (2000). "Molecular dynamics simulation of the atomic structure of a NiO tilt grain boundary at high temperature", *Modelling and Simulation in Materials Science and Engineering* 8, 117 <https://doi.org/10.1088/0965-0393/8/2/303>
- B109. J. Argyris**, I. Andreadis and **T.E. Karakasidis**, (2000) "On perturbations of the Mandelbrot map", *Chaos, Solitons and Fractals* 11, 1131. [https://doi.org/10.1016/S0960-0779\(99\)00017-X](https://doi.org/10.1016/S0960-0779(99)00017-X)
- B110. J. Argyris**, **T.E. Karakasidis** and I. Andreadis, (2000) "On the Julia set of the perturbed Mandelbrot map", *Chaos, Solitons and Fractals* 11, 2067. [https://doi.org/10.1016/S0960-0779\(99\)00101-0](https://doi.org/10.1016/S0960-0779(99)00101-0)
- B111. T.E. Karakasidis**, G.A. Evangelakis, (1999) "Cation vacancy diffusion on the NiO(001) surface by molecular dynamics simulations", *Surface Science* 436, 193. [https://doi.org/10.1016/S0039-6028\(01\)01063-9](https://doi.org/10.1016/S0039-6028(01)01063-9)

- B112.** T. Karakasidis and M. Meyer, (1997) "Grain boundary diffusion of cation vacancies in nickel oxide: a molecular dynamics study", *Physical Review B*, 55, 13853.
<https://doi.org/10.1103/PhysRevB.55.13853>
- B113.** M. Meyer, T. Karakasidis and C. Waldburger, (1996) "High Temperature Diffusion in a NiO Tilt Grain Boundary: a Molecular Dynamics Study", *Materials Science Forum*, 207-209, 525.
- B114.** T. Karakasidis and P. J. D. Lindan, (1994) "A comment on a rigid-ion potential for UO₂", *J. Phys.: Condens. Matter* 6, 2965. <https://doi.org/10.1088/0953-8984/6/15/019>

C. PUBLICATIONS IN INTERNATIONAL CONFERENCES WITH REVIEW

- C1.** Konstantinos Papastamatiou, Filippas Sofos, **Theodoros E. Karakasidis**, Calculating material properties with purely data-driven methods: From clusters to symbolic expressions, SETN '22: Proceedings of the 12th Hellenic Conference on Artificial Intelligence September 2022 Article No.: 61, Pages 1–9 <https://doi.org/10.1145/3549737.3549802>
- C2.** Myrovali, G., **Karakasidis, T.**, Ayfantopoulou, G., & Morfoulaki, M. (2022). Spatio-Temporal Causal Relations at Urban Road Networks; Granger Causality Based Networks as an Insight to Urban Traffic Dynamics. In Proceedings of Sixth International Congress on Information and Communication Technology (pp. 791-804). Springer, Singapore.
https://link.springer.com/chapter/10.1007/978-981-16-2377-6_73
- C3.** Myrovali G., **Karakasidis T.**, Morfoulaki, M., Ayfantopoulou, G. (2020), "Clustering of Urban Road Paths Identifying the Optimal Set of Linear and Nonlinear Clustering Features", *Conference on Sustainable Urban Mobility*, 1107-1116, 2020, Springer
- C4.** Myrovali, G., **Karakasidis, T.**, Charakopoulos, A., Tzenos, P., Morfoulaki, M., Aifadopoulou, G., (2019) Exploiting the Knowledge of Dynamics, Correlations and Causalities in the Performance of Different Road Paths for Enhancing Urban Transport Management (2019) Lecture Notes in Business Information Processing, 348, pp. 28-40.
- C5.** E.G Karvelas, C. Liosis, **T.E. Karakasidis** and I.E. Sarris, Mixing of Particles in Micromixers under Different Angles and Velocities of the Incoming Water, MDPI Proceedings, 2(11), 577 (2018)
- C6.** E.G. Karvelas, **T.E. Karakasidis** and I.E Sarris, 'A computational method for optimum mixing of nanoparticles in micromixers by using external magnetic fields', 3rd EWaS International Conference, 27-30 June 2018, Lefkada, Greece (2018).

- C7.** E.G. Karvelas, N.K. Lampropoulos, D.I. Papadimitriou, **T.E. Karakasidis** and I.E. Sarris, Computational study of the effect of gradient magnetic field in navigation of spherical particles, Journal of Physics: Conference Series 931(1), 012014 (2017).
- C8.** A.K. Charakopoulos, G. Katsouli and **T. Karakasidis**, Capturing system dynamics using complex networks and granger causality analysis: application to environmental data, 23rd International Congress on Sound and Vibration, 10-14 July 2016, Athens, Greece
- C9.** Kasiteropoulou, D., **Karakasidis, T.**, Liakopoulos, A. Particle based simulation of fluid flow in periodically grooved channels (2016) ECCOMAS Congress 2016 - Proceedings of the 7th European Congress on Computational Methods in Applied Sciences and Engineering, 2, pp. 3026-3044.
- C10.** E.G. Karvelas, N.K. Lampropoulos, **T.E. Karakasidis** and I.E. Sarris, Computational study of the optimum gradient magnetic field for the navigation of spherical particles in the process of cleaning the water from heavy metals, Procedia Engineering, vol. 162 pp. 77-82 (2016)
- C11.** N. Kefou, E.G. Karvelas, K. Karamanos, **T. Karakasidis** and I.E. Sarris, Water Purification in Micromagnetofluidic Devices: Mixing in MHD Micro Mixers, Procedia Engineering, vol. 162 pp. 593-600 (2016).
- C12.** Charakopoulos, **T.E. Karakasidis** and I. Sarris, Application of recurrence quantification analysis in wind time series from wind farms, Proceedings of the Conference "SCience in TEchnology SCinTE 2015, 5-7 November, Athens, Greece
- C13.** A.D.Fragkou, **T.E. Karakasidis** and E. Nathanail, Non-linear Time series Methods Applications on Transport Data, Proceedings of the Conference "SCience in TEchnology SCinTE 2015, 5-7 November, Athens, Greece
- C14.** A.K. Charakopoulos, **T.E. Karakasidis**, P.N. Papanicolaou, A. Liakopoulos, Application of complex network time series analysis in the study of spatiotemporal phenomena, International Conference on Topology and its Applications, July 3-7, 2014, Nafpaktos, Greece.
- C15.** D. Kasiteropoulou, **T. Karakasidis**, A. Liakopoulos, Roughness effect on flows in micro and nano-channels, 12th International Conference on Protection and Restoration of the Environment, Skiathos, GR, June/July 2014
- C16.** F. Sofos, **T.E. Karakasidis**, A. Liakopoulos, Flows over hydrophobic/hydrophilic surfaces at the nanoscale, 12th International Conference on Protection and Restoration of the Environment, Skiathos, GR, June/July 2014
- C17.** F. Sofos, **T.E. Karakasidis**, A. Liakopoulos, Transport properties of fluids in hydrophobic/hydrophilic nanochannels, Proceedings of 4th Micro and Nanoflows Conference, London, UK, September 2014

- C18.** F. Sofos, A. Liakopoulos, **T.E. Karakasidis**, Darcy friction factor in nanoscale channel flows: a molecular dynamics study, 10th HSTAM International Congress on Mechanics May 2013, Chania, Crete, Greece
- C19.** **Karakasidis, T.** (2013, March). Virtual and remote labs in higher education distance learning of physical and engineering sciences. In Global Engineering Education Conference (EDUCON), 2013 IEEE (pp. 798-807). IEEE.
- C20.** Charakopoulos, **T.E. Karakasidis**, P.N. Papanicolaou, Detection of jet axis in a horizontal turbulent jet via nonlinear analysis of minimum/maximum temperature time series, Chaotic Modeling and Simulation CMSIM) 1: 205-217, 2012
- C21.** **T.E. Karakasidis**, Incorporation of Nanotechnology in the curriculum of Civil Engineering Education, EUCEET Association Conference, "New Trends and Challenges in Civil Engineering Education", Patras, Greece (2011)v
- C22.** F. Sofos, **T. Karakasidis**, A.E. Giannakopoulos, A. Liakopoulos, "Transport properties of fluids in confined nanochannels: bridging nano to macro", 3rd Micro and Nano Flows Conference (MNF2011), Thessaloniki, Greece, August 22-24, 2011.
- C23.** D. Kasiteropoulou, **T. Karakasidis**, and A. Liakopoulos, "Dissipative Particle Dynamics Simulation of Flow in Periodically Grooved Three-Dimensional Nano- and Microchannels", 3rd Micro and Nano Flows International Conference, Thessaloniki -Greece, 22-24 August 2011.
- C24.** F. Sofos, **T.E. Karakasidis** and A. Liakopoulos, Fluid flow at the nanoscale: how fluid properties deviate from the bulk, 8th International Conference on Nanosciences & Nanotechnologies – NN11, 12-15 July 2011, Thessaloniki, Greece
- C25.** D. Kasiteropoulou, **T.E. Karakasidis**, A. Liakopoulos, "Dissipative Particle Dynamics Simulation of Flow in Periodically Grooved Three-Dimensional Nanochannels", 4th ICSC, July 7-10, Athens, 2010.
- C26.** D. Kasiteropoulou, **T. Karakasidis**, and A. Liakopoulos, "Investigation of Parameters Affecting Planar Nanochannel Flows by Dissipative Particle Dynamics", 7th International Conference on Nanosciences and Nanotechnologies, Halkidiki, Greece, July 2010.
- C27.** D. Kasiteropoulou, **T. Karakasidis**, and A. Liakopoulos, "Microfluidics Simulations in Periodically Grooved Channels using Dissipative Particle Dynamics", 2nd European Conference on Microfluidics, Toulouse, December 2010.
- C28.** F. Sofos, **T. Karakasidis**, and A. Liakopoulos, "Fluid properties in rough-wall nanochannels, 2nd European Conference on Microfluidics", Toulouse, December 2010
- C29.** **T E Karakasidis**, C A Charitidis, "Nanoscale tailoring of crack propagation modes in glass-ceramic materials" symposium J: Interfacial nanostructures in ceramics: a multiscale

approach of the E-MRS 2007 Spring Meeting, Strasbourg (France) from May 28 to June 1, 2007

- C30.** T.E. Karakasidis, N. Skoulidis, and H.M. Polatoglou “A molecular dynamics study of NiO deposited on Ag(001)”, Submitted to symposium J : Interfacial nanostructures in ceramics: a multiscale approach of the E-MRS 2007 Spring Meeting, May 28 to June 1, 2007.
- C31.** F. Sofos, T. Karakasidis and A. Liakopoulos: “Variation of transport properties accross nanochannels: a study by non-equilibrium Molecular Dynamics”, IUTAM Symposium on Advances in Micro and Nanofluidics, Dresden, Germany, 6-8 September 2007.
- C32.** T.E. Karakasidis, C.A. Charitidis, D. Skarakis, “The effect of point defects on the elastic properties of layered structured nanomaterials”, Conference MESOMECHANICS 2007, 13-17 May 2007, Giens Peninsula, France
- C33.** T. Karakasidis, D. Vavougios, “Promoting science literacy through understanding of novel technological materials”, North American - European and South American Symposium on Science and Technology Education, “Science and Technology Literacy on the 21th Century”, May 31 to June 4, 2006, Nicosia, Cyprus
- C34.** T.E. Karakasidis, A. Fragkou, A. Liakopoulos, “Binary Lennard-Jones Fluids: A look through tme series analysis”, March Meeting της American Physical Society (Baltimore 13-17 March 2006).
- C35.** T. Karakasidis , A. Fragkou , A. Liakopoulos, “Recurrence Analysis of Fluid Molecular Dynamics Simulation”, 59th Annual Meeting of the APS Division of Fluid Dynamics, November 19–21, 2006; Tampa Bay, Florida
- C36.** T.E. Karakasidis “Time series analysis of a fluid at the microscale”, Workshop Heat transfer simulation at the atomic scale: new challenges for the future, Centre Européen de Calcul Atomique et Moléculaire, Lyon, France , 14-16/09/2006
- C37.** T.E. Karakasidis, G. Palamitzoglou, P. Papanicolaou, A. Liakopoulos “Temperature fluctuations in a horizontal round heated jet :a look through time series analysis”, Workshop “Towards the Future of Complex Dynamics” Dresden, May 30 - June 1, 2005
- C38.** T.E. Karakasidis “Vibrational and topological properties of selected NiO surfaces”, European Conference on Surface Science (ECOSS23) Berlin 4-8 September 2005
- C39.** T.E. Karakasidis, “*Vibrational properties of NiO(110) by molecular dynamics simulation*”, International Conference of Computational Methods in Sciences and Engineering 2003 (ICCMSE 2003) Kastoria, Greece 12-16/9/2003.
- C40.** T.E. Karakasidis and A. B. Liakopoulos, “*Characteristic scale extraction in continuum and atomistic fluid simulations*”, Conference on the Influence of Traditional Mathematics and Mechanics on Modern Science and Technology, Messini, Greece, 24-28/5/2004.

- C41.** T.E. Karakasidis and A. B. Liakopoulos, “*Revealing short-time atomic dynamics in fluids: linear and non-linear methods*”, έγινε δεκτό στο 7th National Congress on Mechanics, Chania, Crete, Greece, 24-26/6/2004.
- C42.** T.E. Karakasidis and A. B. Liakopoulos, “*Short-time Dynamical Behavior of Fluids at the atomic Scale*”, υποβλήθηκε στο XXI International Congress of Theoretical and Applied Mechanics (organised by IUTAM), 2004, Warsaw, Poland, 15–21/8/2004.
- C43.** T.E. Karakasidis, A. Liakopoulos, N. Cholevas, “*Parallel molecular dynamics simulation of Lennard-Jones liquids on a small Beowulf Cluster*”, International Conference of Computational Methods in Sciences and Engineering 2003 (ICCMSE 2003) Kastoria, Greece, 12-16/9/2003.
- C44.** T. Karakasidis, A. Liakopoulos “Multiscale Modelling and Simulation in Fluids” *International Symposium of Multiscaling in Materials*, Messini, Greece, 2-6/9/2002.
- C45.** T. Karakasidis “Vibrational Properties of a $\Sigma(310)[001]$ NiO grain boundary as a function of temperature: a molecular dynamics simulation” *Conference on Computational Physics CCP2001*, Aachen, Germany, 5-8/9/2001.
- C46.** T. Karakasidis, N. Cholevas, A. Liakopoulos “Performance analysis of parallel molecular dynamics simulation of Lennard-Jones liquids on a small Beowulf cluster” *Conference on Computational Physics CCP2001*, Aachen, Germany, 5-8/9/2001.
- C47.** T. Karakasidis, D.G. Papageorgiou G.A. Evangelakis “A molecular dynamics study of the Ni^{+2} adatom diffusion on the NiO(001) surface”, *Fifth International Conference Diffusion in Materials 2000* Paris, France, 17-21/7/2000.
- C48.** T.E. Karakasidis and G. A. Evangelakis, “Vibrational Properties of the NiO(001) face with and without cationic adatoms”, *18th Greek-Bulgarian Symposium on Semiconductor Physics*, Thessaloniki, Greece, 15-19/2/1999.
- C49.** T.E. Karakasidis, G.A. Evangelakis “Molecular Dynamics Simulation of the vibrational and transport properties of the NiO(001) surface with and without cationic adatoms”, *Fifth International Conference on Atomically Controlled Surfaces, Interfaces and Nanostructures*, Aix-en-Provence, France, 6-9/7/1999.
- C50.** T. Karakasidis, G. Evangelakis “Cationic vacancy diffusion on NiO(001) surface : a molecular dynamics study”, *XXth IUPAP International Conference on Statistical Physics (STATPHYS20)* Paris, France, 20-25/7/1998.

D. ABSTRACTS IN INTERNATIONAL CONFERENCES AFTER REVIEW

- D1.** K. Anagnostopoulos, N. Nasikas, T. Karakasidis "Multi-scale modeling of crack propagation in a matrix of inclusions" European Congress and Exhibition on Advanced Materials and

Processes (EUROMAT2019), Symposium D8. Multiscale and Multiphysics Modelling of Materials, Processes and Devices, (1-5 September, 2019, Sweden)

- D2.** E.G. Karvelas, N. K. Lampropoulos, **T.E. Karakasidis** and I.E. Sarris, 'A computational analysis of paramagnetic spherical nanoparticles for medical applications under magnetic field', European congress and exhibition on advanced materials and processes (Euromat 2017), 17-22 September 2017, Thessaloniki, Greece (Oral presentation).
- D3.** A.K. Charakopoulos, **T.E. Karakasidis**, P.N. Papanicolaou and A. Liakopoulos, Testing the complex networks from multivariate time series: Application to turbulent flow, 8th GRACM International Congress on Computational Mechanics 12th-15th July 2015, University of Thessaly, Volos, GREECE
- D4.** Joan Bech, Gilles Molinie, **Theodoros Karakasidis**, Sandrine Anquetin, Jean Dominique Creutin, Jean-Pierre Pinty, and Juan Escobar, Analysis of the observed and forecast rainfall intensity structure in a precipitation event, Geophysical Research Abstracts, Vol. 16, EGU2014-15301-1, 2014, EGU General Assembly 2014
- D5.** Gilles Molinie, **Theodoros Karakasidis**, Athanasios Triantafyllou, Jean Dominique Creutin, and Sandrine Anquetin, The role of the non-linear relief-rain interaction in the rainfall intensity structure, Geophysical Research Abstracts, Vol. 15, EGU2013-10228, 2013, EGU General Assembly 2013
- D6.** A. Livaniou, **T. E. Karakasidis**, Applications of Nanomaterials and Nanotechnology in Civil Engineering: An Overview, 9th International Conference on Nanosciences & Nanotechnologies - NN12, 12-15 July 2012, Thessaloniki, Greece
- D7.** F. Sofos, **T.E. Karakasidis**, A. Liakopoulos, Fluid/wall interactions in a nanofluidic system: the interface region, 9th International Conference on Nanosciences & Nanotechnologies - NN12, 12-15 July 2012, Thessaloniki, Greece
- D8.** D. Kasiteropoulou, **T.E. Karakasidis**, A. Liakopoulos, Parameters Affecting Planar Grooved Nanochannel Flows Via Dissipative Particle Dynamics Simulations. 9th International Conference on Nanosciences & Nanotechnologies - NN12, 12-15 July 2012, Thessaloniki, Greece
- D9.** A. Charakopoulos, **T.E. Karakasidis**, P. Papanicolaou, Detection Of Jet Axis In A Horizontal Turbulent Jet Via Nonlinear Analysis Of Minimum/Maximum Temperature Time Series, 4th Chaotic Modeling and Simulation International Conference, Agios Nikolaos, Crete, Greece, May 31 - June 3, 2011.
- D10.** F. Sofos, **T.E. Karakasidis** and A. Liakopoulos, Fluid flow at the nanoscale: how fluid properties deviate from the bulk, 8th International Conference on Nanosciences & Nanotechnologies - NN11, 12-15 July 2011, Thessaloniki, Greece

- D11.** D. Kasiteropoulou, T.E. Karakasidis, A. Liakopoulos, Investigation of Parameters Affecting Planar Nanochannel Flows by Dissipative Particle Dynamics, 7th International Conference on Nanosciences & Nanotechnologies — NN10, Ouranoupolis, Halkidiki, Greece, July 2010
- D12.** T.E. Karakasidis, M. Peristeropoulou, Application of phase space reconstruction methods in system identification, 2010 International Conference on Topology and its Applications, Nafpaktos, Greece 26-30 July, 2010
- D13.** M. Morfoulaki, T.E. Karakasidis, Cluster and time series models applied in traffic data analysis, 2010 International Conference on Topology and its Applications, Nafpaktos, Greece 26-30 July, 2010
- D14.** I. Andreadis and T. E. Karakasidis, On a topological closeness of noise perturbed julia sets, , Nonlinear Dynamics and Complexity: Theory, Methods and Applications in honor of Tassos Bountis on the occasion of his 60th birthday, Thessaloniki, Greece 12 - 16 July 2010
- D15.** X. Karatza and T. E. Karakasidis, Time-series analysis of temperature time series from a turbulent elliptical heated jet, Nonlinear Dynamics and Complexity: Theory, Methods and Applications in honor of Tassos Bountis on the occasion of his 60th birthday, Thessaloniki, Greece 12 - 16 July 2010
- D16.** T.E. Karakasidis, S. Biziaki, I.E. Sarris, A. Liakopoulos, «Nonlinear time series analysis in a turbulent channel flow», 21st International Conference/Summer School NONLINEAR SCIENCE AND COMPLEXITY, Athens, July 21 – August 2, 2008
- D17.** T.E. Karakasidis, C.A. Charitidis, “The effect of impurities on the elastic properties of layered structured nanomaterials”, Symposium J: Interfacial nanostructures in ceramics: a multiscale approach of the E-MRS 2007 Spring Meeting, Strasbourg (France) from May 28 to June 1, 2007
- D18.** T E Karakasidis, C A Charitidis, “Nanoscale tailoring of crack propagation modes in glass-ceramic materials” Symposium J: Interfacial nanostructures in ceramics: a multiscale approach of the E-MRS 2007 Spring Meeting, Strasbourg (France) from May 28 to June 1, 2007
- D19.** T.E. Karakasidis, N. Skoulidis, and H.M. Polatoglou “A molecular dynamics study of NiO deposited on Ag(001)”, Submitted to symposium J: Interfacial nanostructures in ceramics: a multiscale approach of the E-MRS 2007 Spring Meeting, which will be held at the Congress Center in Strasbourg (France) from May 28 to June 1, 2007.
- D20.** F.Sofos, T. Karakasidis and A. Liakopoulos, “Variation of transport properties accross nanochannels: a study by non-equilibrium molecular dynamics”, IUTAM Symposium on Advances in Micro and Nanofluidics, Dresden, Germany, 6-8 September 2007.

- D21.** F. Sofos, T. Karakasidis, and A. Liakopoulos, Non-Equilibrium Molecular Dynamics Simulations of Channel Flows, Bulletin of the APS 52 (17), 2007.
- D22.** D.Kasiteropoulou, A. Liakopoulos, T. Karakasidis, "Friction laws for planar channels with idealized periodic roughness elements.", 60th Annual Meeting of the Division of Fluid Dynamics, APS, Salt Lake City, Utah, USA, November 18–20, 2007
- D23.** T.E. Karakasidis, A. Fragkou, A. Liakopoulos, "Binary Lennard-Jones Fluids: A look through time series analysis", March Meeting of the American Physical Society (Baltimore 13-17 March 2006).
- D24.** Theodoros Karakasidis, Athanasios Fragkou , Antonios Liakopoulos, "Recurrence Analysis of Fluid Molecular Dynamics Simulation", 59th Annual Meeting of the APS Division of Fluid Dynamics, November 19–21, 2006; Tampa Bay, Florida
- D25.** T.E. Karakasidis "Time series analysis of a fluid at the microscale", Workshop Heat transfer simulation at the atomic scale: new challenges for the future, Centre Européen de Calcul Atomique et Moléculaire, Lyon, France , 14-16/09/2006
- D26.** T.E. Karakasidis, G. Palamitzoglou, P. Papanicolaou, A. Liakopoulos "Temperature fluctuations in a horizontal round heated jet :a look through time series analysis", Workshop "Towards the Future of Complex Dynamics" Dresden, May 30 - June 1, 2005
- D27.** T.E. Karakasidis "Vibrational and topological properties of selected NiO surfaces", European Conference on Surface Science (ECOSS23) Berlin 4-8 September 2005
- D28.** T.E. Karakasidis, "*Temperature dependence of vibrational properties of a $\Sigma 5(310)[001]$ NiO grain boundary: a molecular dynamics simulation*", Conference on Computational Physics CCP2001, Aachen, Germany, 5-8/9/2001.
- D29.** T.E. Karakasidis, N. Cholevas, A. Liakopoulos, "*Performance analysis of parallel molecular dynamics simulation of Lennard-Jones liquids on a small Beowulf cluster*" Conference on Computational Physics CCP2001, Aachen, Germany, 5-8/9/2001.
- D30.** T.E. Karakasidis, D.G. Papageorgiou G.A. Evangelakis, "*A molecular dynamics simulation study of the Ni^{+2} adatom diffusion on the NiO(001) surface*", Fifth International Conference Diffusion in Materials DIMAT2000, Paris, France, 17-21/7/2000.
- D31.** T.E. Karakasidis, G.A. Evangelakis, "Molecular Dynamics Simulation of the vibrational and transport properties of the NiO(001) surface with and without cationic adatoms", Fifth International Conference on Atomically Controlled Surfaces, Interfaces and Nanostructures, Aix-en-Provence, France, 6-9/7/1999.
- D32.** T. Karakasidis, G. Evangelakis, "*Cationic vacancy diffusion on NiO(001) surface: a molecular dynamics study*", XXth IUPAP International Conference on Statistical Physics (STATPHYS20) Paris, 20-25/7/1998.

E. BOOK CHAPTERS

- H1. T. Karakasidis** and A. Liakopoulos, Chapter 17 Understanding slip at the nanoscale in fluid flows using atomistic simulations, in "Detection of pathogens using micro- and nano-technology", IWA Publishing (2012)
- E1. F. Sofos, T. Karakasidis**, and A. Liakopoulos, «Variation of transport properties along nanochannels: a study by non-equilibrium molecular dynamics, IUTAM Symposium on Advances in Micro- and Nanofluidics», IUTAM Bookseries 15, Springer Science + Business Media B.V., 2009.
- E2. T.E. Karakasidis**, CA. Charitidis and D. Skarakis, Particle and Continuum Aspects of Mesomechanics, Edited by George C. Sih, Moussa Nan-Abdelaziz, Toan Vu-Khanh, ISTE (2007) Point defects of the elastic properties of layered structured nano-materials,. pp. 183-190

F. TEXTBOOKS (IN GREEK)

1. I. Sarris, **T. Karakasidis**, "Numerical methods for engineers" (in Greek) Tziolas publishing, 1st edition 2012. 212p.. 25x17.
2. J.2 E. Evdoridou, **T. Karakasidis**, "Academic writing" (in Greek, with examples in English, French, Italian), Tziolas publishing, 1st edition 2013, 614p. 25x17
3. E. Evdoridou, **T. Karakasidis** – Art and Science, Galileo Galilei, Umberto Eco, Italo Calvino / 2nd Edition, University of Thessaly publishing, 108p. · 24x17
4. Sarris I., **T. Karakasidis**, "Numerical methods for engineers" (in Greek) Tziolas publishing, 2nd edition 2014, 514p. · 24x17
5. Sarris I., **T. Karakasidis**, "Numerical methods for engineers" (in Greek) Tziolas publishing, 3rd edition 2015, 604p. · 24x17
6. E. Evdoridou, **T. Karakasidis**, "Academic writing" (in Greek, with examples in English, French, Italian), Tziolas publishing, 2nd edition, 2015, 764p, 24x17.
7. E. Evdoridou, **T. Karakasidis**, Writing, écriture, scrittura, Tziolas publishing, 2015. – 404p. 24x17.
8. Sarris I., **T. Karakasidis**, "Numerical methods for engineers" (in Greek) Tziolas publishing, 4th edition, 2017. 816p. 24x17
9. E. Evdoridou, **T. Karakasidis**, "Academic writing" (in Greek, with examples in English, French, Italian), Tziolas publishing, 3rd edition, 2017. 912p. · 24x17

The textbooks are selected as suggested textbooks in more than 25 departments in Universities all over Greece.

G. POPULAR SCIENCE

1. “Roulis the Science Cat”, T. Karakasidis (in Greek (a book for small children the main hero being a cat who lives with science professor) 2015, Diaforos editions

H. OTHER REPORTS

- H1.** E. Tsironi, **T. Karakasidis**, A study on the identity of applying and selected graduate students along with satisfaction and employment survey of the graduates of the postgraduate study program of the Department of Mechanical Engineering of the University of Thessaly for the period 1998 – 2002, Volos 2003 (in Greek, 72 pages)
- H2.** E. Tsironi, **T. Karakasidis**, Satisfaction and employment survey of the graduates of the postgraduate study program of the Department of Mechanical Engineering of the University of Thessaly, Volos (Greece) 2003 (in Greek, 44 pages).

I.23. CITATIONS

1. Scopus (without any self-citations): 1460, h factor =23
2. Google Scholar: total citations (from all sources) 2349