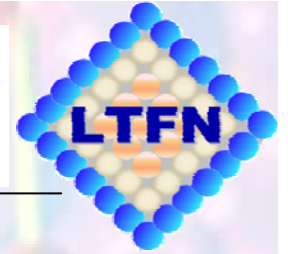




Research Thematic Network:

NANONET



Thematic Network **NANONET**

“Nano & Bio-Technologies” Network

Network Responsible: S. Logothetidis

PARASKEVI KAVATZIKIDOU

Introduced on September 2003

Supported by:

AUTH RESEARCH COMMITTEE



INTERDISCIPLINARY POST GRADUATE PROGRAM
"NANOSCIENCES & NANOTECHNOLOGIES (N&N)"



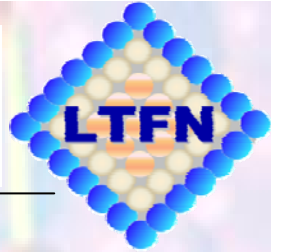
LAB FOR THIN FILMS-
NANOSYSTEMS & NANOMETROLOGY (LTFN)





Research Thematic Network:

NANONET



OUTLINE

NANONET

INTRODUCTION

ACTIVITIES

BENEFITS FROM NANONET: LTFN AS AN EXAMPLE

CLUSTERS AND THEIR STATISTICS

NANONET IN GREECE

NANONET STATISTICS

NANONET MEMBERS ON THE MAP

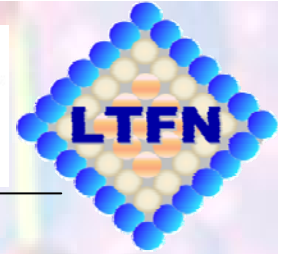
COLLABORATION WITH OTHER NETWORKS

CONCLUSIONS AND WHAT HAPPENS NEXT



Research Thematic Network:

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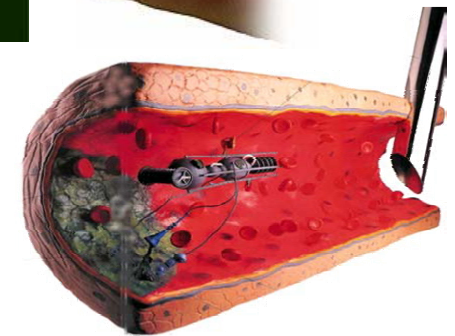
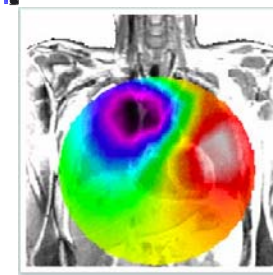
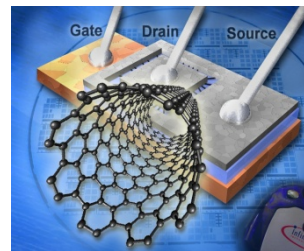
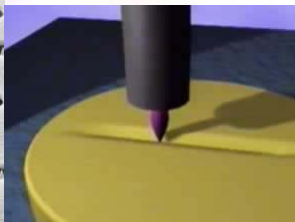
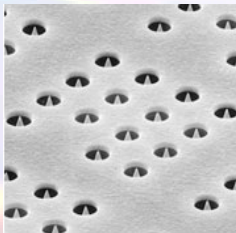
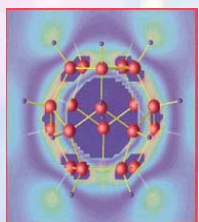
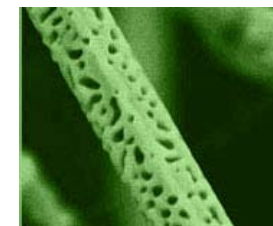
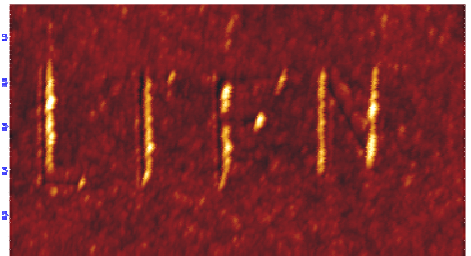
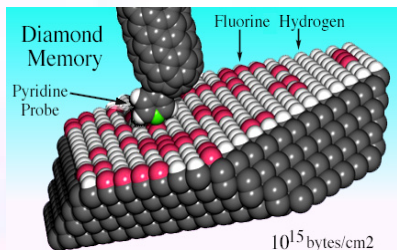
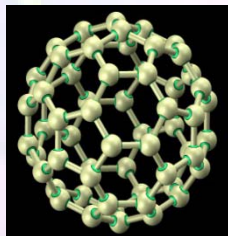


INTRODUCTION

NANOSCIENCES: Research & Understanding interactions at nanoscale, Develop Tools - Control & Restructure Matter in the Nanoscale and Molecular level

NANOTECHNOLOGIES: Construction and Control of Devices & Systems ~ 100nm by Controlling – Restructuring & Manipulating Matter

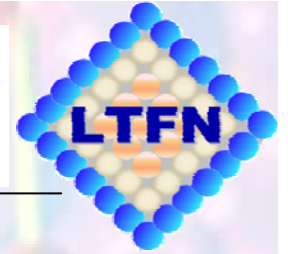
Nanotechnology is a **Cross - Scientific & Poly - Thematic Area** where **Physics, Chemistry & Biology Converge & Meet** **Engineering, Info, Pharma & Medicine**





Research Thematic Network:

NANONET



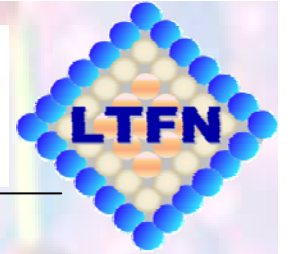
Cross - disciplinarity takes shape in **NanoNet**, where the **200 collaborating Labs** and the **296 Members** covers *Physics, Chemistry, Biology, Material Science, Nanometrology, Nanosystems, Medicine and Nanobiotechnology*

SCOPE

- **Coordination of National Policies**, comparative research, dissemination of results in the fields of **Nano-Technologies**
- **Integration of National**, European and International R&D
- **Synchronization of Regional Education Schemes** to establish comprehensive Education Programs in N&N
- **Build up Scientific & Technical** expertise between “Nano” & “Bio” and Upgrading for effective market oriented developments



Research Thematic Network: **NANONET**



NANONET

Nanobiotechnology
& Nanomedicine

Organic Electronics,
Nanoelectronics -
Nanophotonics

Nanomaterials,
Nanoengineering &
Nanomechanics

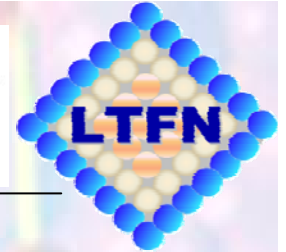
Nanotechnology in
Energy & Environment

**Vertical
Clusters**

Computational Modelling at the Nanoscale

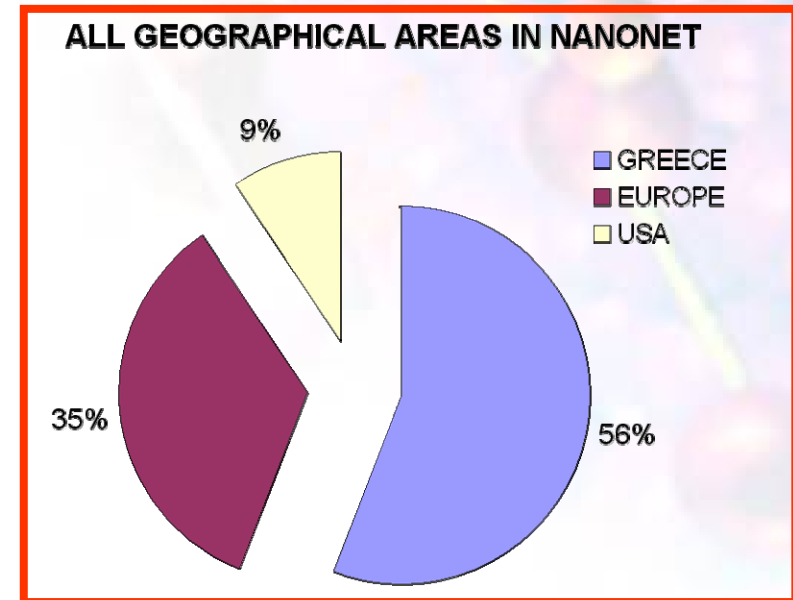
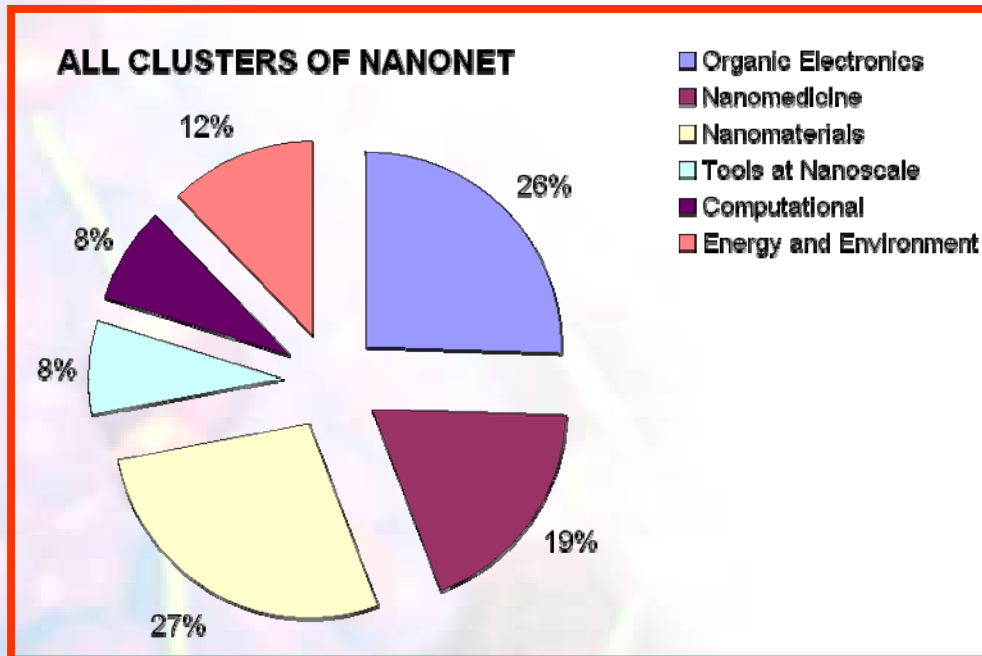
Nanometrology & Tools at Nanoscale

**Horizontal
Clusters**



GENERAL STATISTICS

- **200** Organisations (Universities-Labs, Research Centres, Companies) from Greece, Balkans, Europe and USA.



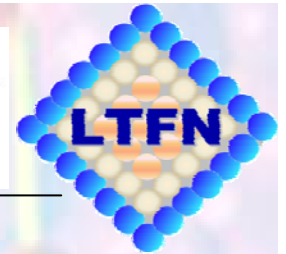
More active Clusters are:

- Nanomaterials
- Organic Electronics
- Nanomedicine followed closely by Energy (Vertical Clusters)
- Horizontal Clusters overlap at a great extent with the Vertical Clusters



Research Thematic Network:

NANONET



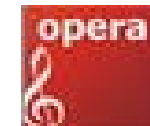
MAIN ACTIVITIES

- ❑ **Exploit the Benefits** of relevant technologies & of knowledge dissemination throughout the members,
- ❑ **Build up new Collaborations** with research carriers from Greece, Balkan area, Europe & Internationally in N&N
- ❑ **Interaction with Funding agencies** & industries, providing an overview of Challenges, Technologies & Opportunities in Nanotechnology
- ❑ **Participation of the Network members** in National, European and International R&D programs
- ❑ **Collaboration of NanoNeT** with other existing Internationally Networks and Forums
- ❑ **Organization & Support Educational programs, Conferences and Summer Schools**

NANOINDENT.eu

FPS-STREP PROJECT
FLEXONICS

PolyNet



N&N 08

N&N 09

N&N 10

SS-NN09

ISSON-10

IS-OE 08

IS-OE 09

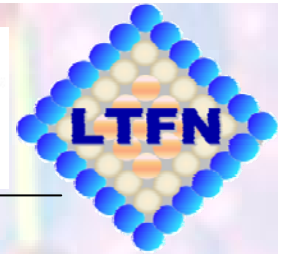
IS-OE 10

N&N



Research Thematic Network:

NANONET

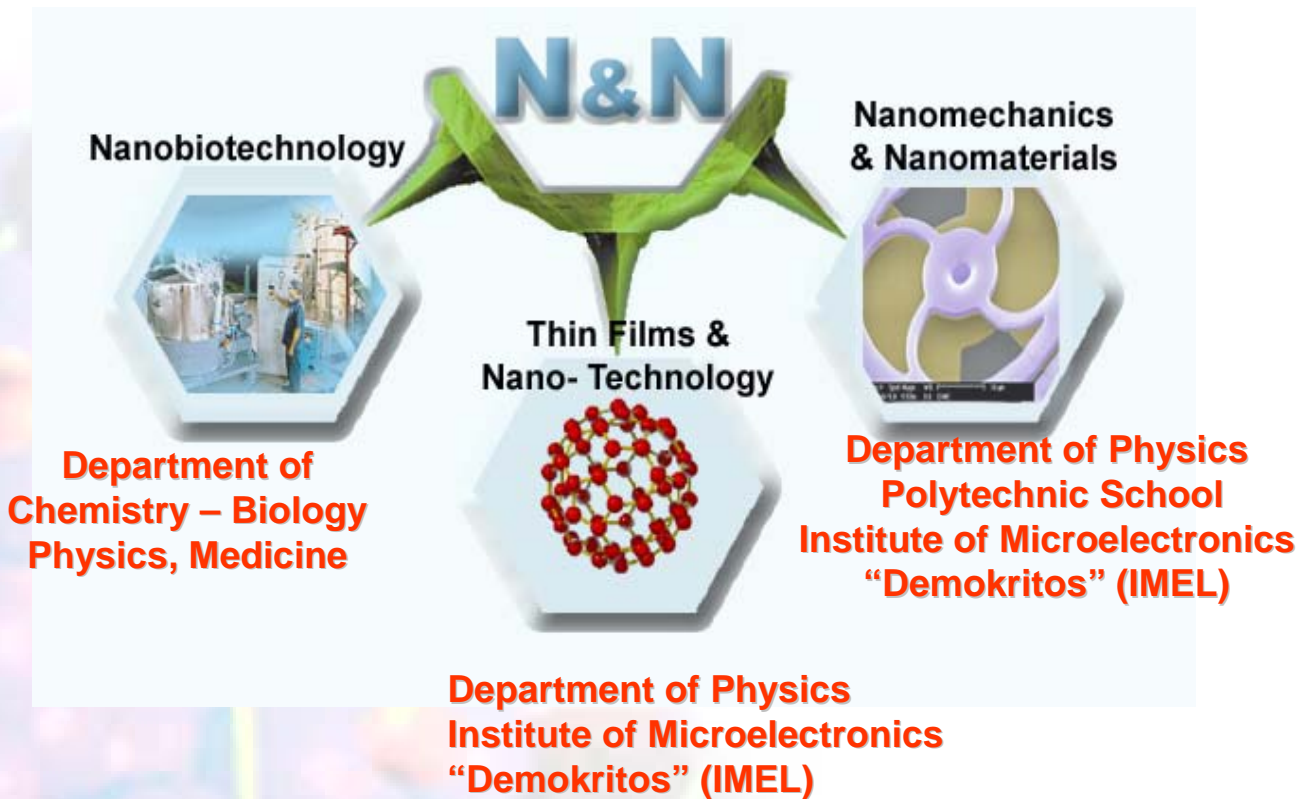
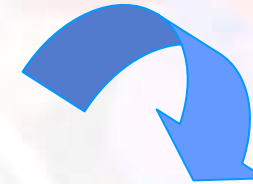


Educational Activities

Interdisciplinary Post Graduate Program since 2002

“Nanosciences & Nanotechnologies - N&N”

Aristotle University of Thessaloniki



2009: The first PhDs on Nanomedicine & Biomaterials

- Development of novel nanocoatings with tailored properties for medical devices
- Investigation of Thrombogenicity of Stent nanocoatings via Protein & Platelet studies with high resolution techniques

(Dr S. Lousinian, Dr V. Karagkiozaki)

2010: The first PhD on Commercialisation of Nanotechnology

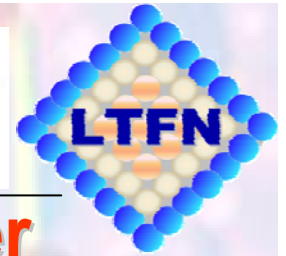
(Dr M. Chachamidou)

<http://nn.physics.auth.gr>



Research Thematic Network:

NANONET



Organizing International Conferences & Summer Schools

N&N08 Organised by the Interdisciplinary Postgraduate Program NANOSCIENCES & NANOTECHNOLOGIES

N&N09 Organised by the Interdisciplinary Postgraduate Program NANOSCIENCES & NANOTECHNOLOGIES

N&N10 Organised by the Interdisciplinary Postgraduate Program NANOSCIENCES & NANOTECHNOLOGIES of AUTH

Thematic Research Network **NANONET**

7th International Conference on Nanosciences & Nanotechnologies - NN10
12-14 July 2010, Alexandros Palace Hotel, Ouranopolis Halkidiki, Greece

Keynote & Invited Lectures
Oral & Poster Presentations
Nanometrology Exhibition
Round tables & Surrounding Events

together with the **4th International Summer School on "Nanosciences & Nanotechnologies"**

- Nanobiotechnology and Nanomedicine
- Organic Electronics
- Thin Films, Meta-materials and Spintronics
- Nanomaterials, Nanoengineering and Nanomechanics
- Nanotechnology in Energy and Environment
- Computational Modelling at the Nanoscale
- Nanotechnology in Safety and Education
- Nanometrology, Instrumentation and Tools
- Commercialization of Nanotechnology

Tentative List of Invited Speakers

- Katras E., Harvard University, Division of Engineering and Applied Sciences, USA
- Anthopoulos T., Imperial College, UK
- Blanchet G.B., Du Pont, USA
- Balazs M., European Commission
- Filion B., CEA, France
- Koussas V., Louisiana State Univ., Stanley S. Scott Cancer Center, Health Sciences Center, LA, USA
- Koutouza V., School of Engineering & Centre for Materials Science and Engineering, Univ. of Edinburgh, UK
- Nanosides A., Physics & Electrical Engineering Dept., Univ. of Scranton, USA
- Papadimitrakopoulos F., Nanotechnology & Integrated Biolog. Centre, University of Ulster, N. Ireland
- Partridge K., Dept. of Materials, Oxford University, UK
- Jamali K.D., Institute of Materials Science and Technology (IMST), Friedrich-Schiller-University Jena
- Malliaras G., Dept. of Materials Science and Engineering, Cornell University, USA
- Damjanovic M., University of Belgrade, Department of Physics, Serbia
- Humbler P., University Hospital of Basel, Switzerland
- Nessopoulos A., Institute of Microelectronics, NTUA, Greece
- Giannelis E., Dept. of Materials Science and Engineering, Cornell University, USA
- Heupelmann G., University Louis Pasteur - Strasbourg, France
- Komposkou K., Dept. of Mechanical Engineering, Univ. of California at Berkeley, USA
- Kaiser D., AXIOMETRON, Germany
- Anastasiadis S.H., FO.R.T.H. & I.E.S.L., Iraklion, Greece
- Misra V., Dept. of Mechanical & Aerospace Engineering, University of Patras, Greece
- Takela V., Physics Department, University of Minho, Portugal
- Carpman E., Dept. of Information Systems & Technology Management, George Washington Univ., USA
- Takalekoti T., Department of Materials Science and Engineering, Rutgers, State University of New Jersey, USA
- Nowak R., Faculty of Chemistry & Materials Science, Helsinki University of Technology (TKK), Finland

Communication sponsors:

EPT3 **Αγγελιοφόρος**

<http://nconf.physics.auth.gr>

Sponsors: LTFN, N&N, NT-MDT, AIXTRON, ANAΨΥΧΙΚΕΣ ΕΥΚΕΚΙΕΣ Α.Ε., Veeco, nano, HYSITRON, LaboScience, STILACK, Prisma, HORIBA JOBIN YVON, JACOMEX, Agilent Technologies, HELLAMCO, PHISICAL ELECTRONICS, ANAΨΥΧΙΚΕΣ ΕΥΚΕΚΙΕΣ Α.Ε., ADVENT

ISSON-10 **N&N10**

<http://nconf.physics.auth.gr/summerschool/index.html>
Alexandros Palace Hotel, Ouranopolis Halkidiki, Greece

4th International Summer School on Nanosciences & Nanotechnologies (N&N): Organic Electronics & Nanomedicine
(10-17 July, 2010, Ouranopolis, Halkidiki, Greece)

Organized by the Postgraduate Program "N&N" of AUTH, NanoNet and LTFN

ISSON-10 is dedicated in:

- N&N
- Organic Electronics
- Nanomedicine & Nanobiotechnology

Who should attend?

- Undergraduate students
- Graduate students
- Post Graduate Students
- Post Doctoral Fellows
- Researcher Scientists

• All those who wish to apply nanotechnology in their research activities

SPONSORS

LTFN, N&N, NT-MDT, AIXTRON, nano, Prisma, JACOMEX, ADVENT, POLYNET, FLEXNET, OLAtronics

3 Parallel Events at the same location from 7-17 July 2010

ISFOE 10 3rd International Symposium on Flexible Organic Electronics
7-9 July 2010, Eagles Palace Hotel, Halkidiki, Greece
<http://isfoe.physics.auth.gr/>

ISSON-10 4th International Summer School on Nanosciences & Nanotechnologies (N&N): Organic Electronics & Nanomedicine
10-17 July 2010, Ouranopolis, Halkidiki, Greece
<http://nconf.physics.auth.gr/>

N&N10 7th International Conference on Nanosciences & Nanotechnologies - NN10
12-14 July 2010, Alexandros Palace Hotel, Ouranopolis Halkidiki, Greece
<http://nconf.physics.auth.gr/>

ISFOE 08 1st International Symposium

ISFOE 09 2nd International Symposium

ISFOE 10 3rd International Symposium on Flexible Organic Electronics
7 - 9 July 2010
Eagles Palace Hotel, Halkidiki, Greece

- Organic electronic materials (small molecule and polymers)
- Organic Multifunctional materials
- Organic/inorganic and hybrid materials and systems
- Flexible substrates & encapsulation methods & materials
- Molecular electronics and photonics
- Self-organized molecules and systems
- Theory & modelling (materials, components and devices)
- Manufacturing (printing, vacuum, chemical) & quality control processes
- Flexible displays & lighting
- Flexible solar cells & batteries
- Flexible circuits & sensors
- Flexible RFIDs & smart textiles
- Integrated smart systems

Special Session: R&D Projects, and Strategy in Europe, USA and Asia in Flexible Organic Electronics!

Visit us on-line:
<http://isfoe.physics.auth.gr>

Organized by: **LTFN**

Plastic Electronics

Chair: S. Logothetidis, LTFN, Greece
Co-chairs:
G. Malliaras, EMSE, France
G. Hadziioannou, LCPO, CNRS, France
M. Ando, Hitachi Europe, Ltd., UK
K. Hashimoto, University of Tokyo, Japan
J. Kallitsis, University of Patras, Greece
R. Lazzaroni, University of Mons-Hainaut, Belgium

Supported by:

OLAtronics, **FLEXNET**, **PolyNet**, **opera**

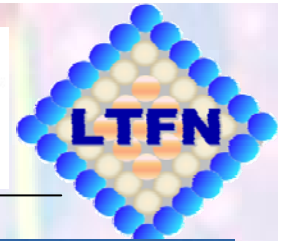
Eagles Palace Hotel, Halkidiki, Greece
<http://www.eaglespalace.gr>

Sponsored by: **Advent**, **eneo**, **HORIBA JOBIN YVON**, **HELLAMCO**, **Prisma Electronics SA**, **AIXTRON**, **JACOMEX**, **PHISICAL ELECTRONICS**, **ANAΨΥΧΙΚΕΣ ΕΥΚΕΚΙΕΣ Α.Ε.**



Research Thematic Network:

NANONET



LTFN Conferences

3rd International Symposium on Flexible Organic Electronics (IS-FOE 10)

Eagles Palace Hotel 6-9 July 2010,
Ouranoupolis Halkidiki, Greece

<http://isfoe.physics.auth.gr>

Organized by:

- LTFN & Aristotle University of Thessaloniki
- Plastic Electronics Foundation

Support:

- FP6 STREP Project NMP3-CT-2005-013883 Flexonics
- FP7 STREP Project ICT-216211 OLAtronics
- FP7 NoE Project ICT-214006 PolyNet
- FP7 CSA Project ICT-215150 OPERA

Symposium Topics:

- Organic electronic materials (small molecule and polymers)
- Organic/inorganic and hybrid materials and systems
- Flexible substrates & encapsulation methods & materials
- Molecular electronics and photonics
- Self organized molecules and systems
- Theory & modelling (materials, components and devices)
- Manufacturing processes (printing, vacuum, chemical)
- Flexible displays & lighting, solar cells, circuits and sensors
- Integrated smart systems

IS-FOE 10 3rd International Symposium
on Flexible Organic Electronics

6 - 9 July 2010
Eagles Palace Hotel, Halkidiki, Greece

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G. Hadziioannou, LCPO, CNRS, France
M. Ando, Hitachi Europe, Ltd., UK
K. Hashimoto, University of Tokyo, Japan
J. Kallitsis, University of Patras, Greece
R. Lazzaroni, University of Mons-Hainaut, Belgium

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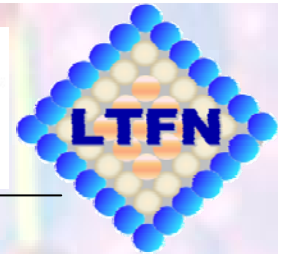
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Research Thematic Network:

NANONET



LTFN Conferences

7th International Conference on Nanosciences & Nanotechnologies (NN10)

Alexandros Palace Hotel, 11-14 July 2010,
Ouranoupolis Halkidiki,

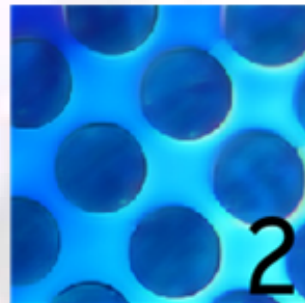
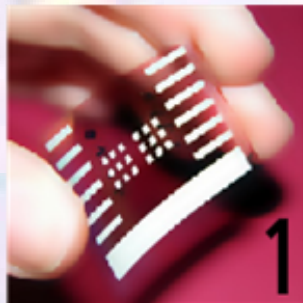
<http://nnconf.physics.auth.gr>

NN10 Workshops:

W1 - ORGANIC ELECTRONICS - PHOTONICS & NANO ELECTRONICS

W2 - NANOMATERIALS, NANOFABRICATION & NANOCONSTRUCTION

W3 - NANOMEDICINE & NANOBIO TECHNOLOGY



N&N10 Organised by the Interdisciplinary Postgraduate Program NANOSCIENCES & NANOTECHNOLOGIES of AUTH

Thematic Research Network **NANONET**

7th International Conference on Nanosciences & Nanotechnologies - NN10

11-14 July 2010, Alexandros Palace Hotel, Ouranoupolis Halkidiki, Greece

Keynote & Invited Lectures
Oral & Poster Presentations
Nanometrology Exhibition
Round tables & Surrounding Events

together with the 4th International Summer School on "Nanosciences & Nanotechnologies":
Organic Electronics & Nanomedicine

- Nanobiotechnology and Nanomedicine
- Organic Electronics
- Thin Films, Meta-materials and Spintronics
- Nanomaterials, Nanoengineering and Nanomechanics
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- Computational Modelling at the Nanoscale
- Nanotechnology in Safety and Education
- Nanometrology, Instrumentation and Tools
- Commercialization of Nanotechnology

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- Kaziras E., Harvard University, Division of Engineering and applied Sciences, USA
- Anthopoulos T., Imperial College, UK
- Blanchet G.B., Du Pont, USA
- Boukerche M., European Commission
- Fain B., CEA, France
- Kousoulas G., Louisiana State Univ., Stanley S Scott Cancer Center, Health Sciences Center, LA, USA
- Koufoss V., School of Engineering & Centre for Materials Science and Engineering, Univ. of Edinburgh, UK
- Yessierli A., Physics & Electrical Engineering Dept., Univ. of Colorado, USA
- Papakonstantinou P., Nanotechnology & Integrated Biolog., Centre, University of Ulster, N. Ireland
- Portyralis K., Dept. of Materials, Oxford University, UK
- Jandl K.D., Institute of Materials Science and Technology (MIT), Friedrich-Schiller-University Jena
- Mallaras G., Dept. of Materials Science and Engineering, Cornell University, USA
- Damjanovic M., University of Belgrade, Department of Physics, Serbia
- Harckner P., University Hospital of Basel, Switzerland
- Nasiopoulou A., Institute of Microelectronics, NCSR Demokritos, Greece
- Giannelis E., Dept. of Materials Science and Engineering, Cornell University, USA
- Hadioustanou O., University Louis Pasteur - Strasbourg, France
- Komvopoulos K., Dept. of Mechanical Engineering, Univ. of California at Berkeley, USA
- Keiper D., AXITRON, Germany
- Aziztashadi, S.H., FORTH & I.E.S.L., Heraklion, Greece
- Missirlis Y., Dept. of Mechanical & Aeronautics Engineering, University of Patras, Greece
- Tsevelis V., Physics Department, University of Minho, Portugal
- Carayanna E.G., Dept. of Information Systems & Technology Management, Georgia Washington Univ., USA
- Tsakalakis T., Department of Materials Science and Engineering, Rutgers, State University of New Jersey, USA
- Nowak R., Faculty of Chemistry & Materials Science, Helsinki University of Technology (TKK), Finland

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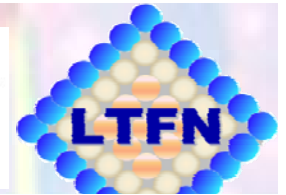
EPT3 **Αγγελιοφόρος**

<http://nnconf.physics.auth.gr>



Research Thematic Network:

NANO^{NET}



LTFN Conferences

4th International Summer School on Nanosciences & Nanotechnologies (ISSON-10)

10-17 July 2010, Ouranoupolis, Halkidiki, Greece

<http://nnconf.physics.auth.gr>

ISSON-10 is dedicated to:

- N&N
- Organic Electronics
- Nanomedicine and Nanobiotechnology



ISSON-10

N&N10

<http://nnconf.physics.auth.gr/summerschool/index.html>

Alexandros Palace Hotel, Ouranoupolis
Halkidiki, Greece



Organized by the Postgraduate Program "N&N" of AUTH, NanoNet and LTFN

ISSON-10 is dedicated in:

- N&N
- Organic Electronics
- Nanomedicine & Nanobiotechnology

Who should attend?

- Undergraduate students
- Graduate students
- Post Graduate Students
- Post Doctoral Fellows
- Researcher Scientists
- All those who wish to apply nanotechnology in their research activities



SPONSORS



3 Parallel Events at the same location from 7-17 July 2010



ISSON-10

N&N10

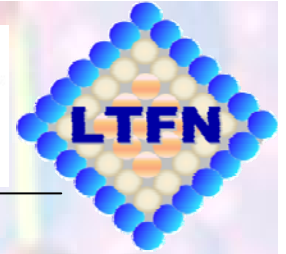
<http://isfoe.physics.auth.gr/>

<http://nnconf.physics.auth.gr/>



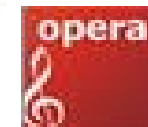
Research Thematic Network:

NANONET



Organization & Support Conferences and Summer Schools

Networking in EU funded Projects, Platforms & Assoc.

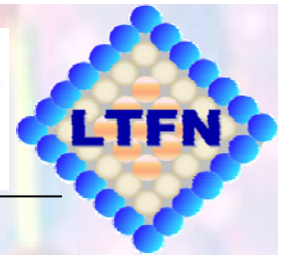


PVD_Coatings Forum

Collaboration with other existing Internationally Networks and Forums



Research Thematic Network: **NANO^{NET}**



Networking Activities in LTFN

NanoNet is an initiative, which started in 2003 from Aristotle University of Thessaloniki (AUTH) and the Lab for Thin Films-Nanosystems (LTFN) from the Physics Department. NanoNet is a Thematic Network aiming to merge the existing expertise and knowledge in two rapidly growing fields of Nanotechnologies and Nanomaterials (N&N).

NanoNet has a multidisciplinary role as it joins the forces of scientists, research centers and companies from the fields of Physics, Biology, Computing, Biology, Medicine, Engineering, Materials Science, Nanotechnology and Nanosystems in Greece, throughout the rest of the World. NanoNet has also an educational role in collaboration with the Interdepartmental & Interschool Program in "Nanosciences & Nanotechnologies" in Aristotle University of Thessaloniki.

NanoNet Clusters

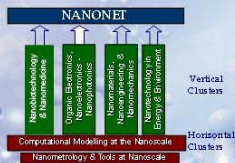
There are six thematic areas, Clusters (4 vertical & 2 Horizontal)

Vertical Clusters

- Thin Films: Organic Electronics, Nanoelectronics & Nanophotonics
- Nanomaterials, Nanomechanics & Nanomechanics
- Nanobiotechnology & Nanomedicine
- Nanotechnology in Energy & Environment

Horizontal Clusters

- Nanometrology & Tools at Nanoscale
- Theoretical & Computational Modeling at the Nanoscale



Today **200 Organizations** (University- Labs, Research Centres) participate in NANONET from Greece, Balkans, Europe and USA. There are **124 Organizations** from **Greece**, **64** from Europe and **12 Companies**.

Members in Europe



Members in USA



OBJECTIVES

- Set a Core that will coordinate the activities and services of AUTH and affiliated members of NanoNet.
- Inform the members of the Network about research program conferences
- Support mobility and communication among members in shared

- BIONOVA E.E, Greece
- LABORSCIENCE AE, Greece
- KARYO Ltd, Greece
- NANOCOSMOS, Greece
- SWEREA IVF, Sweden
- VEECO INSTRUMENTS LTD, UK
- VERTICAL CLUSTER: Nanotechnology in Energy & Environment**
 - Lab for Thin Films-Nanosystems & Nanometrology, Physics Dept, AUTH
 - Lab of Aerosol, Particle Technology, Chemistry Dept, AUTH
 - Lab of General & Inorganic Chemistry, Chemistry Dept, AUTH
 - Lab B' Chemical Engineering, Chemical Engineering Dept, AUTH
 - Materials Science & Technology Dept, Univ. of Ioannina
 - Dept. of Magnetism, Dept. of Physics, Univ. of Ioannina
 - Dept. of Mag. & Superc. Mat., Inst. of Materials, NCSR Demokritos
 - Electronics Dept, TEI of Piraeus
 - Dept of Chemistry, TEI of Crete
 - Inorganic Chemistry Laboratory, CERTH / CPERI
 - Carbon Based Nanomaterials Laboratory, TPCI - NTUA
 - Cent. of Nanoscience, Mat. - CNMFE, Univ. of Ioannina, Romania
 - Lab of Qual. Inf. Phys. & Chem. Res. Dept of Mat., Oxford, UK
 - Dept of Physics/App. Phys. Group, NTNU, Norway
 - Dept of Physics, Minho Univ., Portugal
 - Lab of Organic Electronics, University of Illinois, USA
 - Physics & Electrical Engineering, Univ. of Cambridge, UK
 - Surf. Mech. & Tribology Lab, Dept. of Mech. Eng., Univ. of California, Berkeley, USA
 - LABORSCIENCE AE, Greece
 - INTECS, Italy
 - VEECO INSTRUMENTS LTD, UK
- HORIZONTAL CLUSTER: Nanometrology**
 - Lab for Thin Films-Nanosystems & Nanometrology, Physics Dept, AUTH
 - Lab of Electron Microscopy, Physics Dept, AUTH
 - Lab of Laser Spectroscopy&High Pressure Physics, AUTH
 - Lab of Electronics, Physics Dept, AUTH
 - Lab of Medical Informatics, Medical School, AUTH
 - Femtosecond Laser Lab, Physics Dept, Univ of Patras
 - Dept of Physics/Applied Physics Group, NTNU, Norway
 - Surf. Mech. & Tribology Lab, Dept of Mech. Eng., Univ of California, Berkeley, USA
 - MICRO MATERIALS LTD, UK
 - NANOSURF, Switzerland
 - TECHNOSYSTEMS LV, Latvia
 - DFM-Danish Fundamental Metrology, Denmark
 - VEECO INSTRUMENTS LTD
 - NANOMEGAS SPRL, Belgium
- HORIZONTAL CLUSTER: Computational Modelling at the Nanoscale**
 - Lab of Modeling & Simulation, Physics Dept, AUTH
 - Lab of Mechanics & Materials, General Dept. of Polytechnic School, AUTH
 - Dept of Electrical & Computer Engineering, AUTH
 - Chemical Engineering Dept, National Technical University of Athens
 - Simulational Physics - Mat. Sci. Theory Group, Physics Dept, Univ. of Crete
 - Materials Science & Technology Dept, Univ. of Ioannina
 - Dept of Molecular Biology & Genetics, D.U.T. Alexandroupolis
 - Dept. of Mech. Eng. & Mat. Scie. & Technology, Cyprus Univ. of Technology
 - Theoretical & Physical Chemistry Inst, NHRF

ACTIVITIES

COORDINATION-COLLABORATIONS-NETWORKING:

- Coordination of actions taking place in Greece in the frame of N&N.
- Collaboration with industrial partners & companies of high technology.
- Participation of NanoNet and its members in International & Networks & R&D Projects.
- Coordination and Interaction among the NanoNet clusters.
- Continuous promotion of the network and its members.

ORGANIZATION:

- Organization and interaction through Visits, Meetings, Conferences & Summer Schools on N&Ns.
- Organization of educational seminars for related to Nanotechnology, in collaboration with the Postgraduate Program on "N&N".

INFORMATION:

- Provision of information to the Academic and Research Society regarding Sciences, Industrial Forums and Events.
- Information to the Academic and Research Society on New Technologies dealing with N&Ns.
- Information to the Academic and Research Society regarding funding & cooperation possibilities of National and International Organizations for R&D.

EXPANSION:

- Expansion of the network to new members.
- Expansion of the network to other countries in collaboration of NanoNet members with other research and industrial organizations activated in N&Ns.

RESEARCH:

- Creation of new Scientific and Technological projects.
- Creation of new possibilities of employment for students.

INDUSTRIAL BASED:

- Companies active in the field of electronics, Optoelectronics, Solar Energy, Biomaterials and Medical Services.
- Information engineering, water treatment companies.
- Information, Polymer, Nanotechnology, composite materials companies.
- Chemical, pharmaceutical, diagnostic centers.
- Food, leather and Agricultural industries.
- Food, leather and Agricultural industries.

CONTACT:

Lab for Thin Films-Nanosystems & Nanometrology (LTFN)
Aristotle University of Thessaloniki, Physics Department,
541 24 Thessaloniki, Greece
Tel: +30 551 709174, Fax: +30 231 0998
e-mail: logos@lfn.upat.gr

Thematic Research Network **NANO^{NET}**

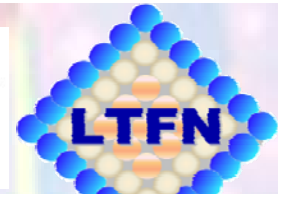
www.nanonet.gr

SUPPORTED BY
POSTGRADUATE PROGRAM "NANOSCIENCES & NANOTECHNOLOGIES (N&N)"
IN FILMS NANOSYSTEMS & NANOMETROLOGY (LTFN)
RESEARCH COMMITTEE OF AUTH

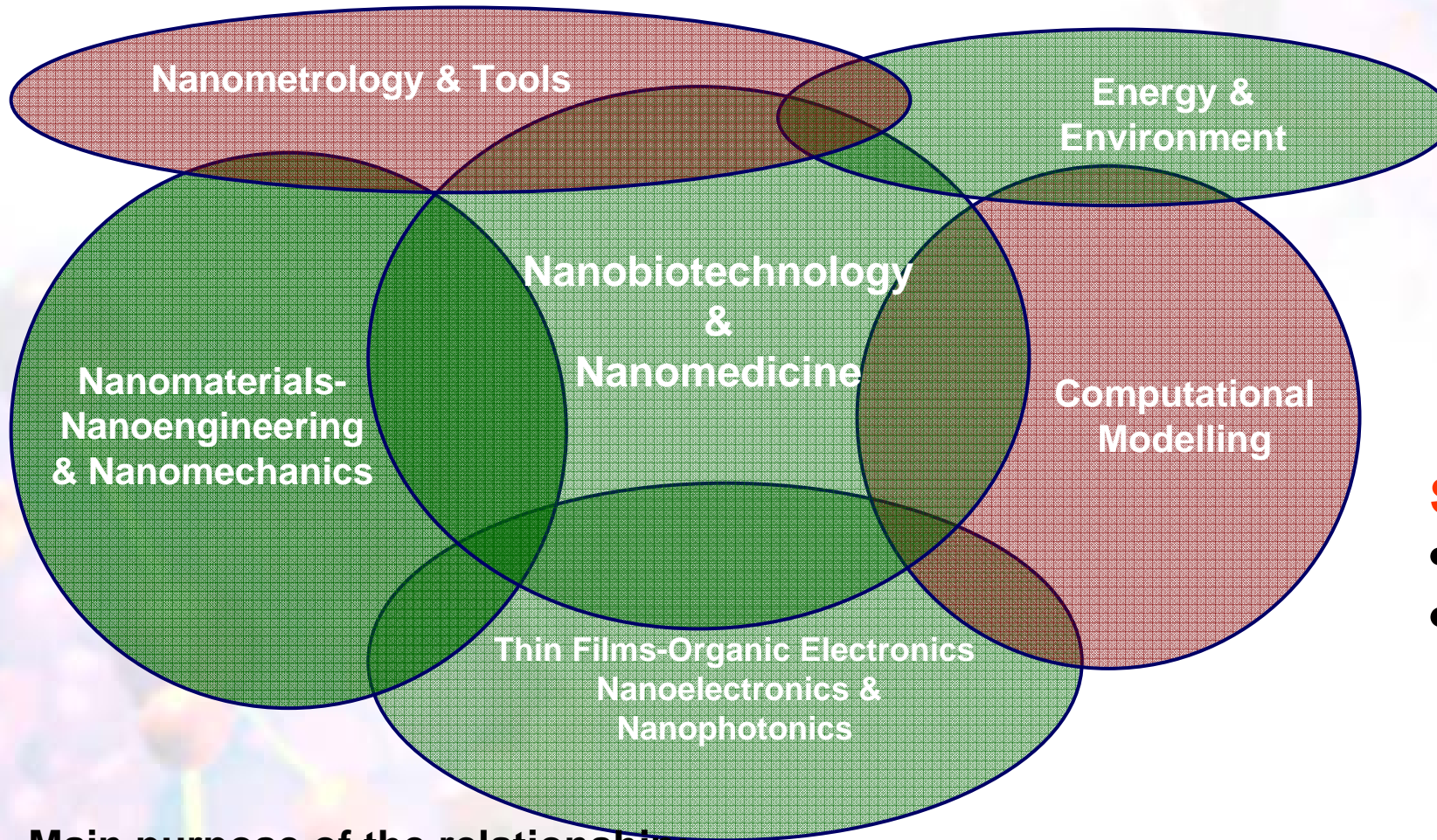
WEBSITE: www.nanonet.gr

Free Registration





Relationship between Clusters



Differences

- Disciplines
- Applications

Similarities

- Activities
- Labs/Companies

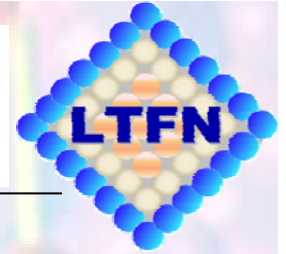
Main purpose of the relationship:

TO STRENGTHEN THE DEVELOPMENT OF EACH CLUSTER & OF THE NETWORK



Research Thematic Network:

NANONET

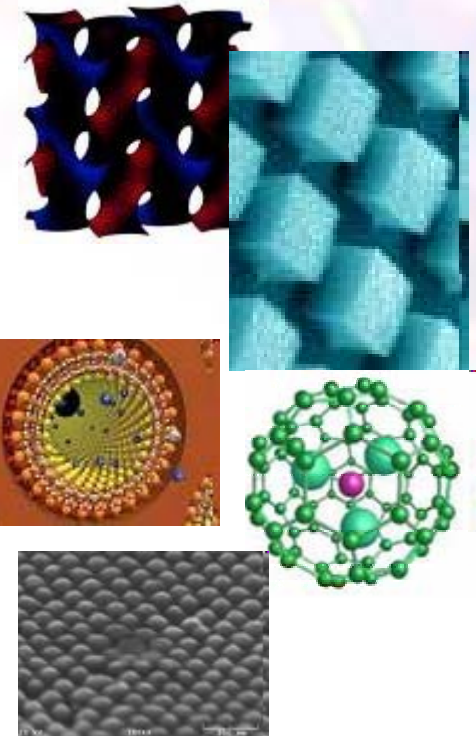


General Information about each Cluster

Nanomaterials, Nanoengineering & Nanomechanics Cluster

There are:

- **Universities: 55 Laboratories**
- **Research Centres: 11 Laboratories**
- **Companies: 16**
 - **Greek Organisations: 45**
 - **European Organisations: 30**
 - **USA Organisations: 7**

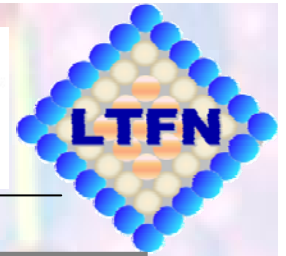


TOTAL: 82 members



Research Thematic Network:

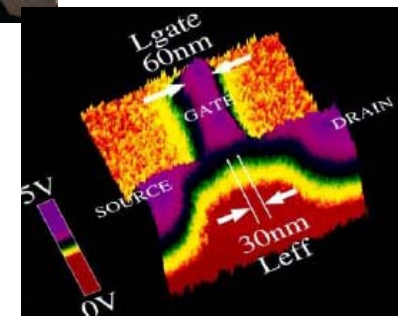
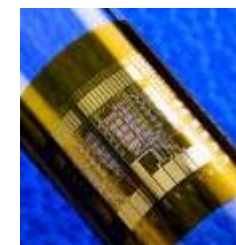
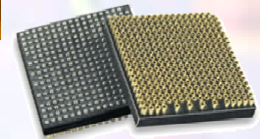
NANONET



Thin Films & Organic Electronics-Nanoelectronics & Nanophotonics Cluster

There are:

- **Universities: 44 Laboratories**
 - **Research Centres: 16 Laboratories**
 - **Companies: 16**
-
- **Greek Organisations: 44**
 - **European Organisations: 26**
 - **USA Organisations: 6**

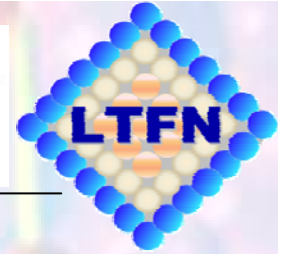


TOTAL: 76 members



Research Thematic Network:

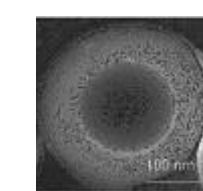
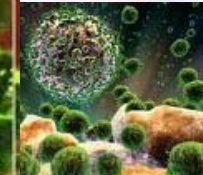
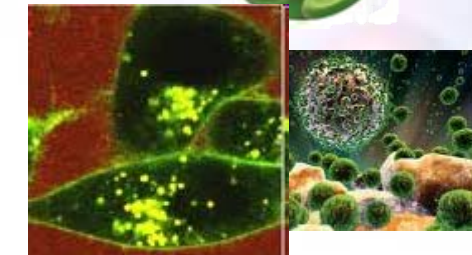
NANONET



Nanobiotechnology & Nanomedicine Cluster

There are:

- **Universities: 40 Labs (& OBE-net)**
 - **Research Centres: 4 Laboratories**
 - **Companies: 11**
-
- **Greek Organisations: 39**
 - **European Organisations: 12**
 - **USA Organisations: 4**

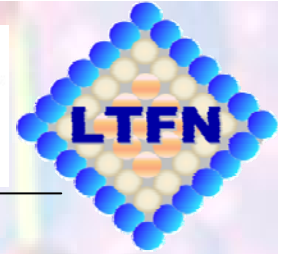


TOTAL: 55 members



Research Thematic Network:

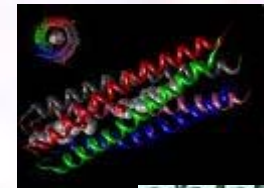
NANONET



Nanotechnology in Energy & Environment Cluster

There are:

- **Universities: 20 Laboratories**
- **Research Centres: 8 Laboratories**
- **Companies: 8**
 - **Greek Organisations: 17**
 - **European Organisations: 15**
 - **USA Organisations: 4**

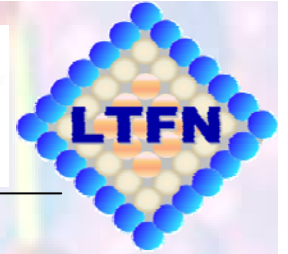


TOTAL: 36 members



Research Thematic Network:

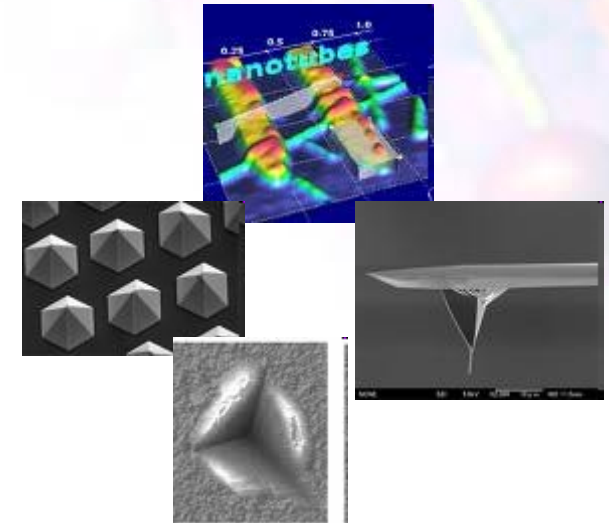
NANONET



Nanometrology & Tools at Nanoscale Cluster

There are:

- **Universities: 13 Laboratories**
- **Companies: 10**
 - **Greek Organisations: 9**
 - **European Organisations: 11**
 - **USA Organisations: 3**

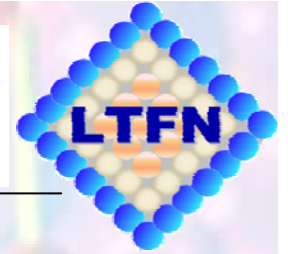


TOTAL: 23 members



Research Thematic Network:

NANONET

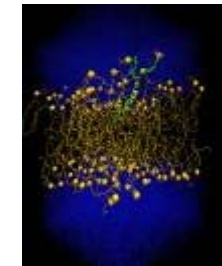
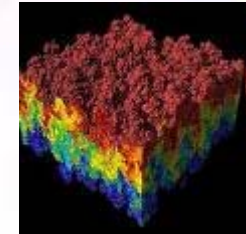


Computational Modelling at the Nanoscale Cluster

There are:

- **Universities: 22 Laboratories**
- **Research Centres: 1 Laboratories**
- **Companies: 1**

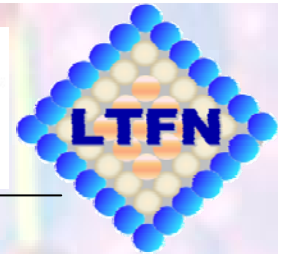
- **Greek Organisations: 12**
- **European Organisations: 7**
- **USA Organisations: 5**



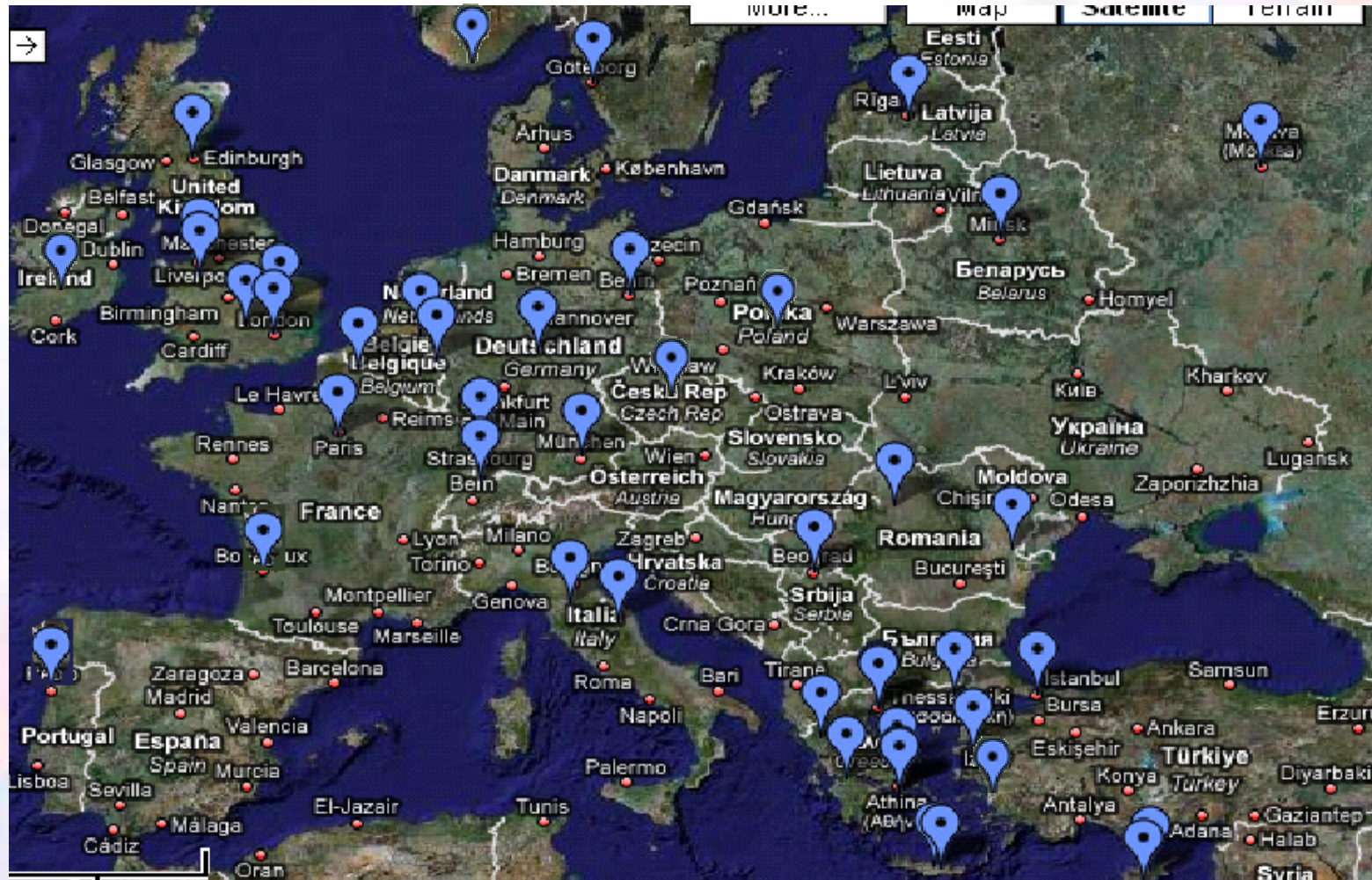
TOTAL: 24 members

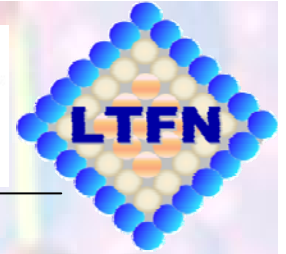


Research Thematic Network: **NANO**NET



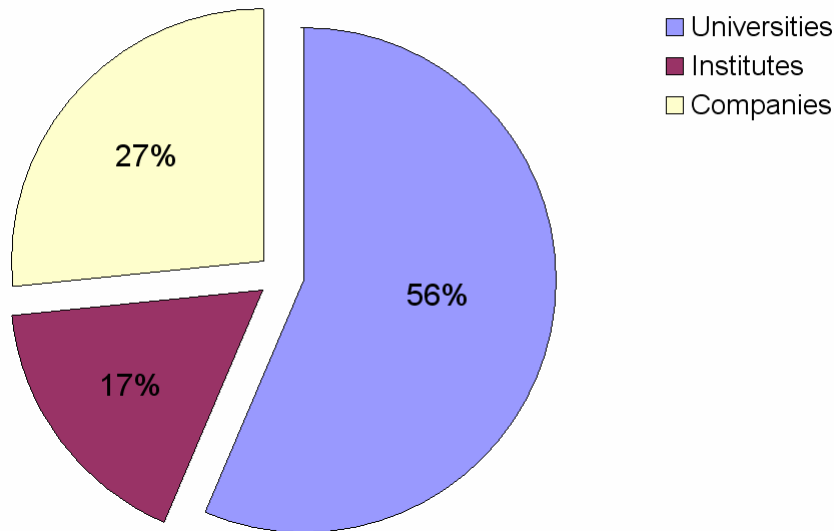
NanoNet Members **in Europe**





NANONET STATISTICS IN EUROPE

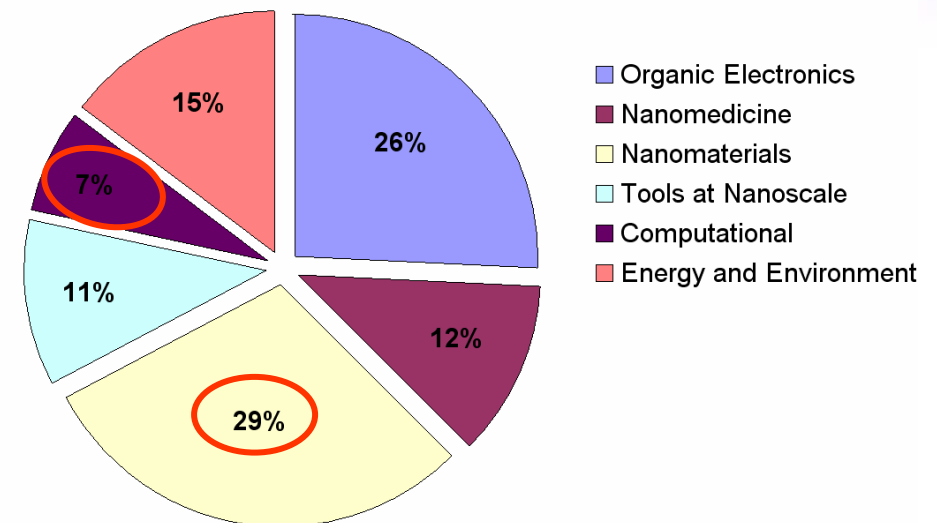
ALL ORGANISATIONS IN EUROPE



Important Findings

- Highest Cluster – Nanomaterials
- Overlap of members for the different applications, thus Clusters
- Lowest Cluster – Computational Modelling

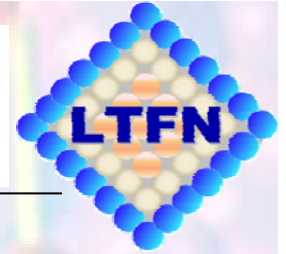
NANONET MEMBERS IN EUROPE



Important Findings

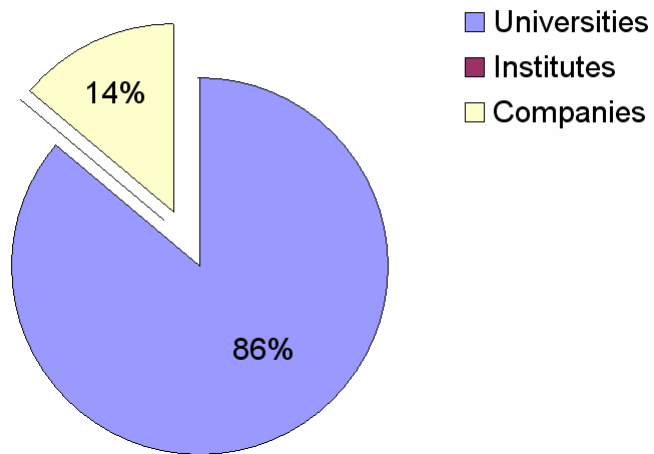
- Highest Participation by European Universities
- European Companies have higher participation than Institutes

There are NanoNet Members participating in more than one Cluster



NANONET STATISTICS IN USA / CANADA

ALL ORGANISATIONS IN USA / CANADA



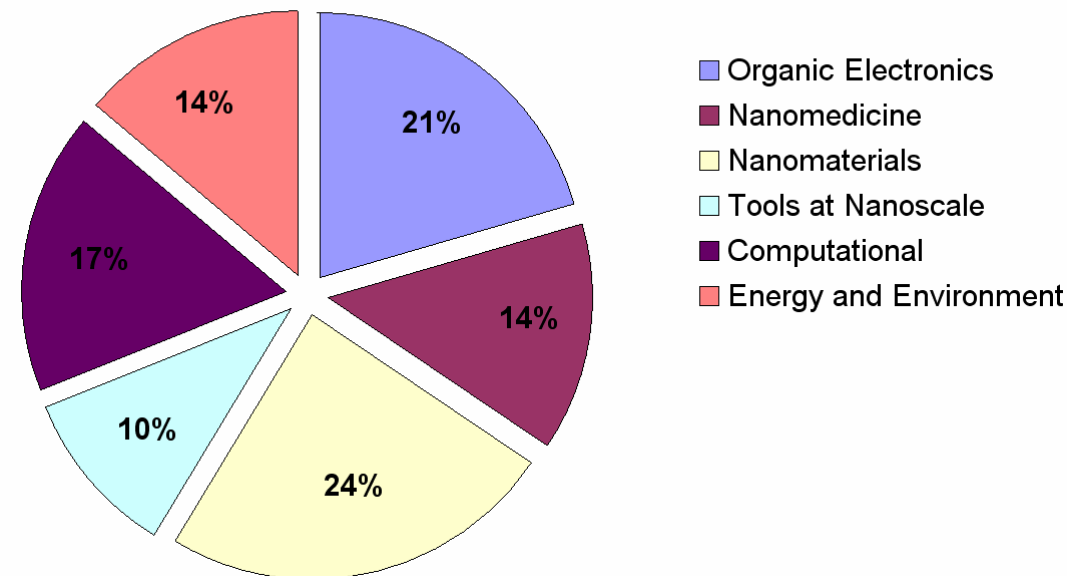
Important Findings

- Highest Participation by Universities
- No Institutes present

Important Findings

- A similar participation of USA / Canada members to all the different Clusters
- Computational Cluster – Strong Participation

NANONET MEMBERS IN USA

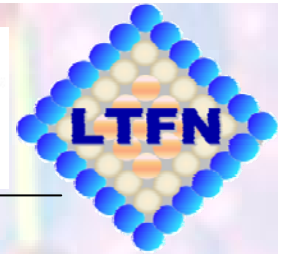


There are NanoNet members participating in more than one Cluster



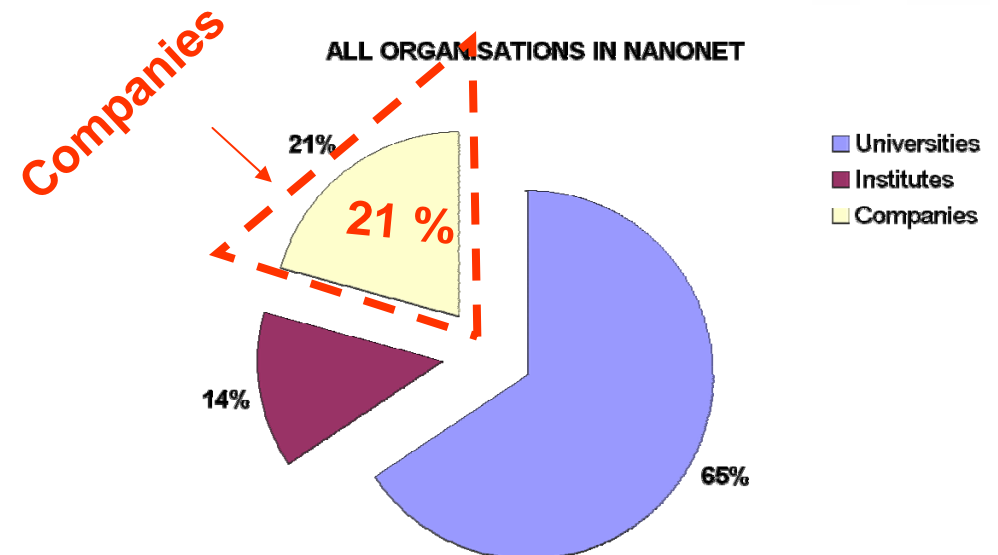
Research Thematic Network:

NANONET



34 COMPANIES IN NANONET

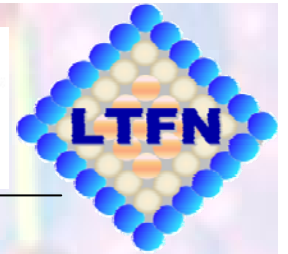
- Electronics, Optics, Optoelectronics
- Biomaterials & Medical Devices
- Surface Engineering & Surface Treatment
- Chemical, Polymeric & Nanocomposite Materials
- Pharmaceutical Companies
- Tools and Equipment
- Food & Agricultural Industries





Research Thematic Network:

NANONET



OUTLINE

NANONET

INTRODUCTION

ACTIVITIES

BENEFITS FROM NANONET: LTFN AS AN EXAMPLE

CLUSTERS AND THEIR STATISTICS

NANONET IN GREECE

NANONET STATISTICS

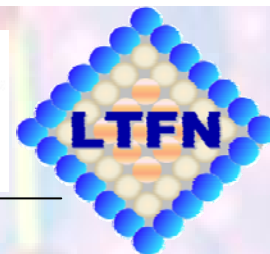
NANONET MEMBERS ON THE MAP

COLLABORATION WITH OTHER NETWORKS

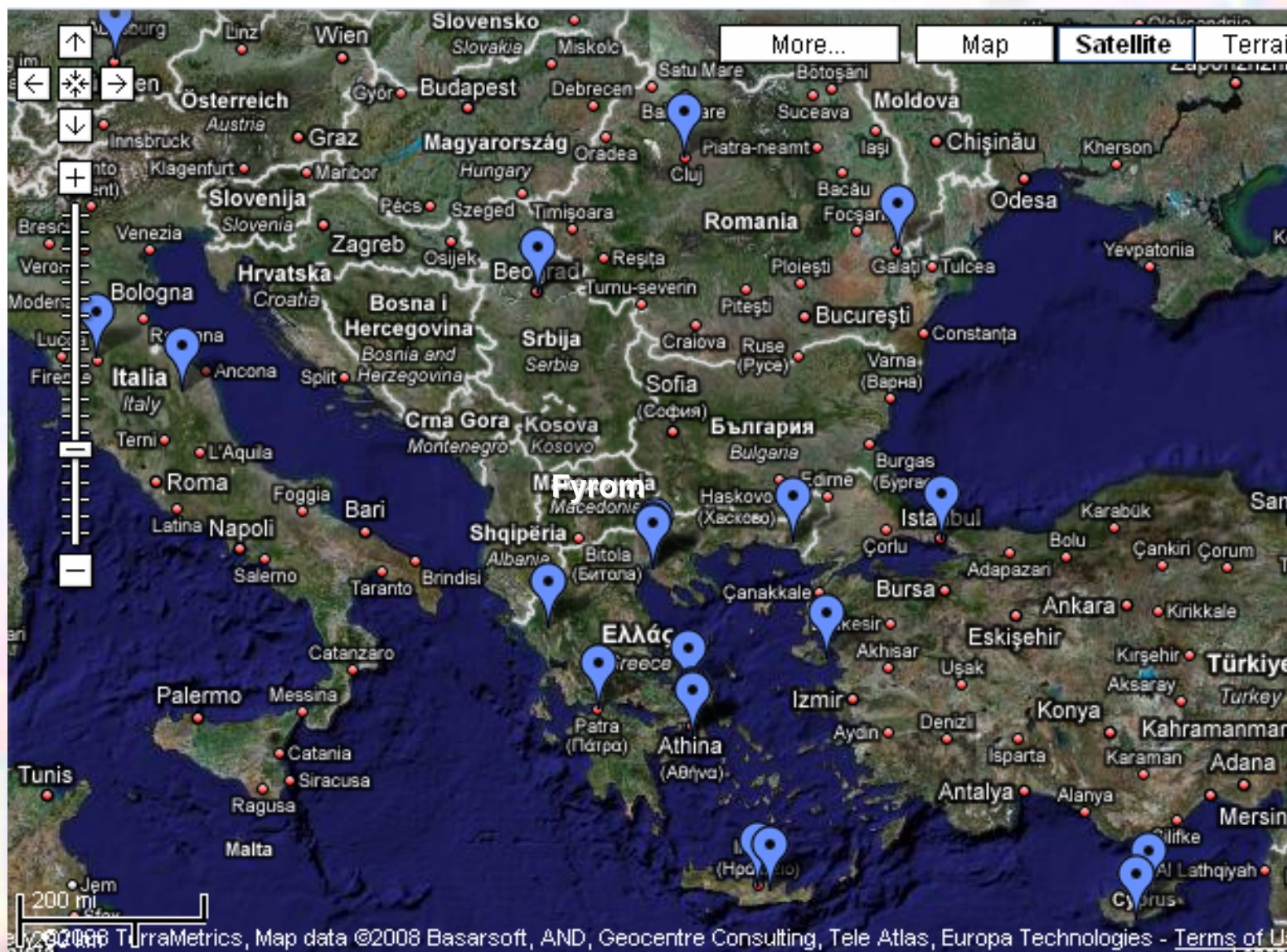
CONCLUSIONS AND WHAT HAPPENS NEXT

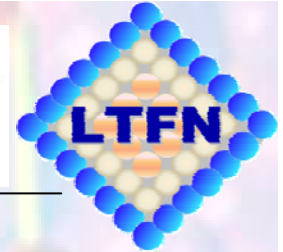


Research Thematic Network: **NANONET**



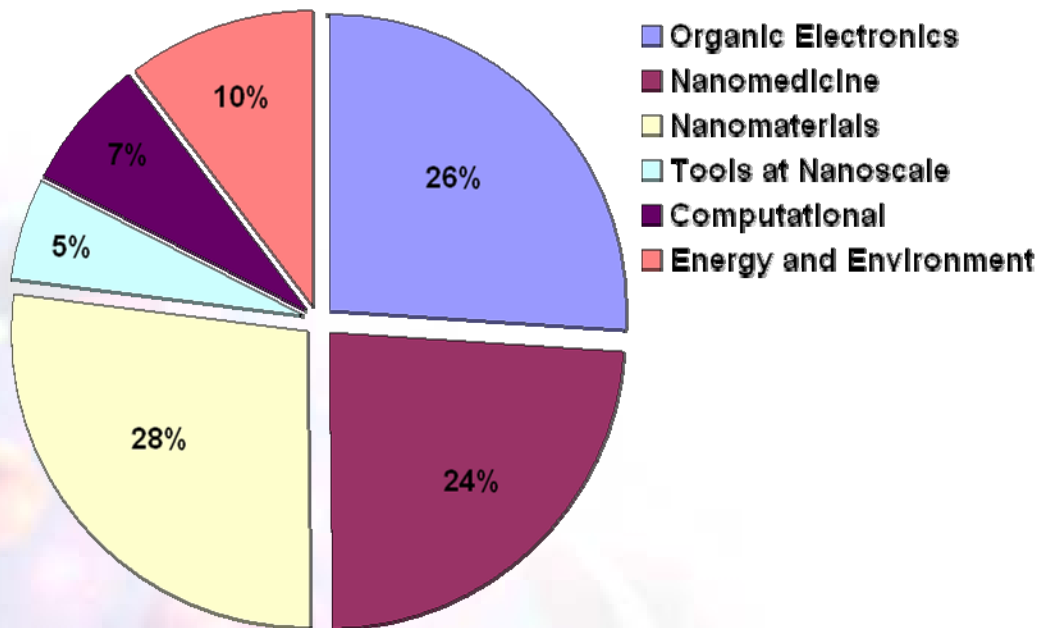
Nanonet Members of Balkans



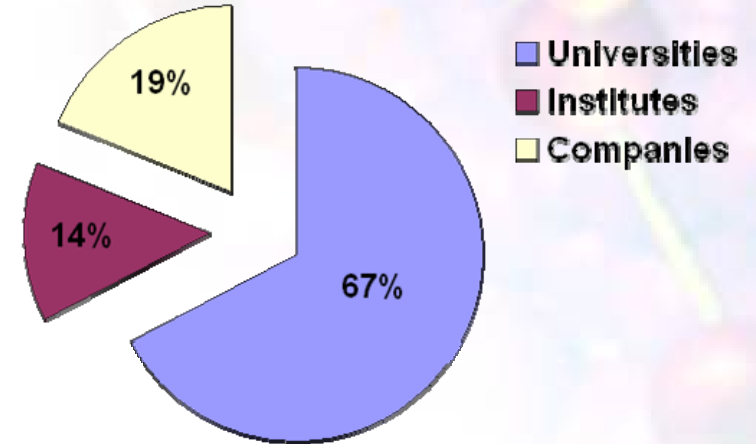


NANONET STATISTICS IN GREECE

NANONET MEMBERS IN GREECE



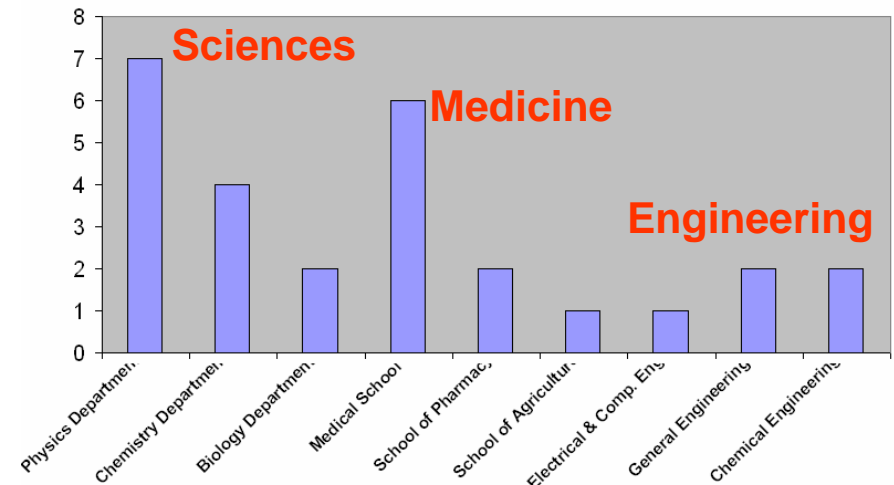
NANONET ORGANISATIONS IN GREECE



OBSERVATIONS

- Strongest Participation by Universities
- Lack of Greek Companies
- Need to motivate Institutions to participate

NanoNet members in AUTH

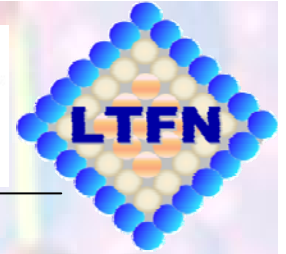


There are NanoNet members participating in more than one Cluster



Research Thematic Network:

NANONET



Department of Physics, AUTH

- LTFN
- Lab for Microelectronics
- Lab of Electron Microscopy
- Lab of Applied Physics
- Lab of Modeling & Simulation
- Lab of Magnetic Materials
- Lab of Electronics



Department of Biology, AUTH

- Lab of General Microbiology



OBE-net Network, AUTH

- Dep. Of Biology
- Dep. Of Chemistry
- School of Pharmacy



General Dept., Polytechnic School, AUTH

- Lab of Mechanics and Materials
- Lab of Laser Spectroscopy and High Pressure Physics

Dept. of Chemical Engineering, Polytechnic School, AUTH

- Lab of Materials Engineering
- Lab of Organic Chemistry

Dept. of Electrical and Computer Engineering, Polytechnic School, AUTH

- Electronics Lab
- Lab of Electrochemical Materials



Department of Chemistry, AUTH

- Lab of Biochemistry
- Lab of Structural Biochemistry
- Lab of General & Inorganic Chemistry



School of Medicine, AUTH

- Lab for Cardiovascular Engineering and Atherosclerosis, Dept. of Cardiology
- Dept. of Orthopaedics
- 2nd Pediatric Clinic-AHEPA School
- Lab of Actinology

The Centre for Research & Technology (CE.R.T.H)



Institute of Agrobiotechnology (INA)

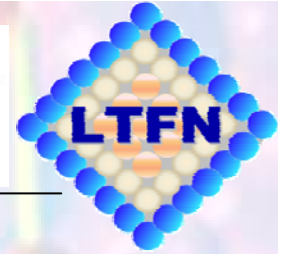


Chemical Process Engineering Research Institute (CPERI)



Research Thematic Network:

NANONET



Department of Materials Science and Technology

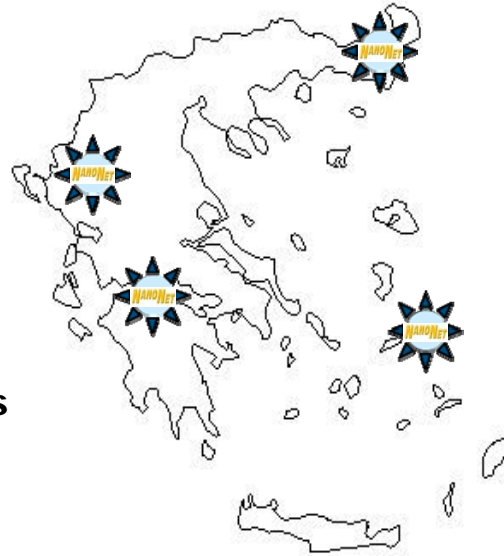


Department of Biological Applications & Technologies



Department of Physics

- Lab Of Magnetism
- Lab for Surface and Interface Analysis



Department of Molecular Biology and Genetics



Department of Information and Communication Systems Engineering

Mechanical Engineering & Aeronautics Dept.

- Lab of Bioengineering and Biotechnology



School of Chemical Engineering



Department of Physics
- Femtosecond Laser Lab



Department of Chemistry

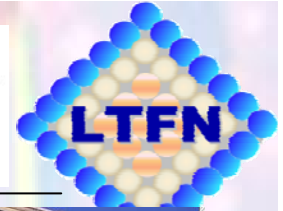


General Department



Research Thematic Network:

NANONET



National Centre of Scientific Research

"DEMOKRITOS"

www.demokritos.gr



Institute of Physical Chemistry 

-Lab for Materials & Membranes for Environmental Applications

Institute of Materials Science

-Lab of Nanofunctional & Nanocomposite Materials

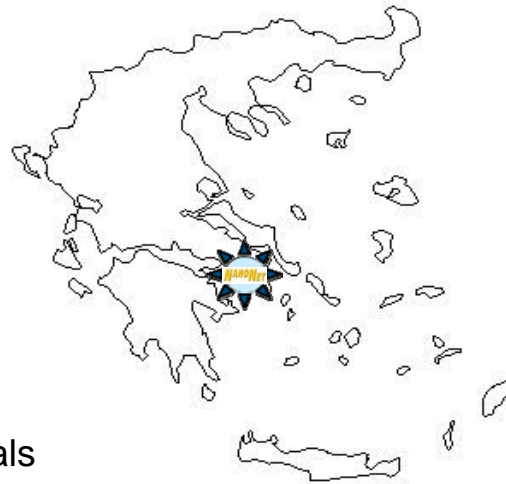
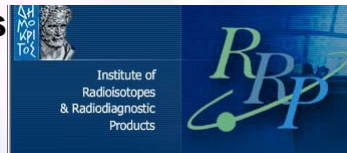


-Lab for Magnetic & Superconducting Materials

Institute of Microelectronics



Institute of Radioisotopes & Radiodiagnostic Products



National Technical University (NTUA)

Chemical Engineering School

School of Chemical Engineering

Technological Educational Institute of Piraeus

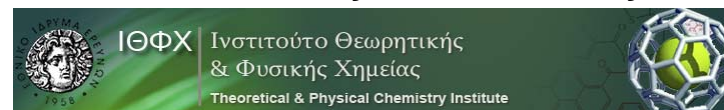
-Dept. of Electronics



National Hellenic Research Foundation (NHRF)



Theoretical and Physical Chemistry Institute (TPCI)



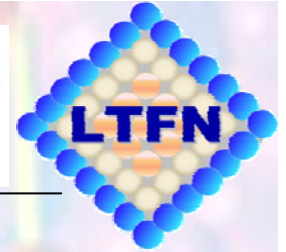
Lab of Carbon Based Nanostructured materials

Lab of Photonics and Nano-applications



Research Thematic Network:

NANONET



Foundation of Research and Technology



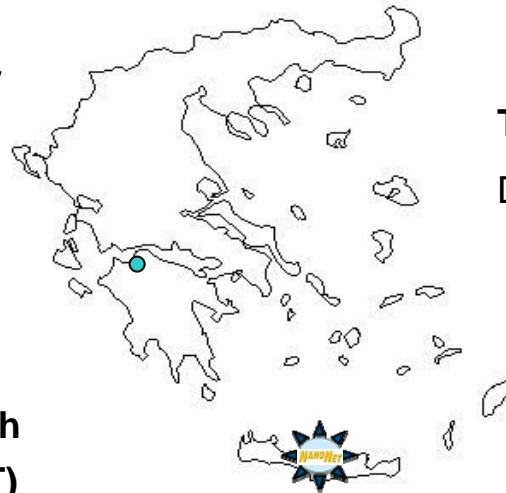
Institute of Electronic Structure and Laser (IESL)



Institute of Molecular Biology and Biotechnology (IMBB)



Institute of Chemical Engineering and High Temperature Chemical Processes (ICE-HT)



University of Crete



Department of Materials Science & Technology

Technological Educational Institute of Crete

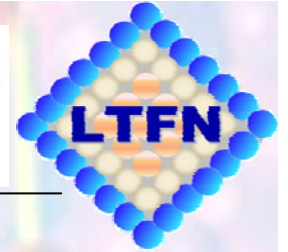
Department of Sciences





Research Thematic Network:

NANONET



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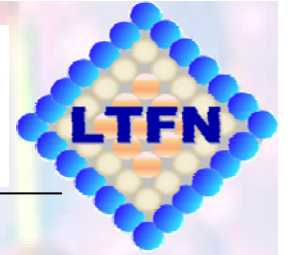
COLLABORATION WITH OTHER NETWORKS

CONCLUSIONS AND WHAT HAPPENS NEXT



Research Thematic Network:

NANONET



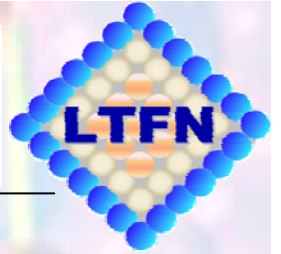
MAIN CONCLUSIONS

- **1ST Greek Network with a cross-disciplinary role**
- **Members have the opportunity to participate in other Clusters and get the knowledge & expertise from other fields**
- **Encouraging Participation of European & Greek Companies**
- **A better transfer of know-how and knowledge between Universities and Companies with Institutes and Research Centres is required**



Research Thematic Network:

NANONET



What Next...

Development of an International Platform

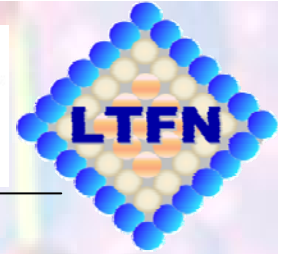
....providing Co-ordination towards Collaboration, Interaction, Dissemination, Support of Education and Organisation of Nano-Bio-Technology and Nanoscience related fields

.....similar to NanoNet's scopeBUT Co-ordination and Collaboration is required



Research Thematic Network:

NANONET



SUGGESTIONS

- **A more Active Role of all the Greek Networks and Groups in order to Organise and Co-ordinate Nanotechnology in Greece**

.....Networks specific on a field of Nanotechnology

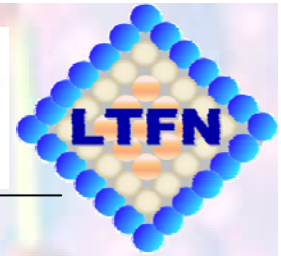
- **PRAXI / HELP-FORWARD Network to help and advise**
- **Take advantage of the experience of Individuals and their groups that participate and co-ordinate EU funded Projects**

.....Any other Suggestions?



Research Thematic Network:

NANONET



THANK YOU FOR YOUR ATTENTION!

N&N10 Organised by the Interdisciplinary Postgraduate Program NANOSCIENCES & NANOTECHNOLOGIES of AUTH
Thematic Research Network **NANONET**

7th International Conference on Nanosciences & Nanotechnologies - NN10
12-14 July 2010, Alexandros Palace Hotel, Ouranoupolis Halkidiki, Greece

Keynote & Invited Lectures
Oral & Poster Presentations
Nanometrology Exhibition
Round tables & Surrounding Events

together with the **4th International Summer School on "Nanosciences & Nanotechnologies"**

- Nanobiotechnology and Nanomedicine
- Organic Electronics
- Thin Films, Meta-materials and Spintronics
- Nanomaterials, Nanoengineering and Nanomechanics
- Nanotechnology in Energy and Environment
- Computational Modelling at the Nanoscale
- Nanotechnology in Safety and Education
- Nanometrology, Instrumentation and Tools
- Commercialization of Nanotechnology

Tentative List of Invited Speakers

- Kostas E. Harvard University, Division of Engineering and applied Sciences, USA
- Anthopoulos T. Imperial College, UK
- Bianchet G.B. Du Pont, USA
- Boukherrou M. European Commission
- Fillon B. CEA, France
- Kourouktsos S. Louisiana State Univ., Stanley S Scott Cancer Center, Health Sciences Center, LA, USA
- Koutoukos V. School of Engineering & Centre for Materials Science and Engineering, Univ. of Edinburgh, UK
- Nanopoulos A. Physics & Electrical Engineering Dept., Univ. of Scranton USA
- Papakonstantinou P. Nanotechnology & Integrated Biomag. Centre, University of Ulster, N. Ireland
- Porfyriou K. Dept. of Materials, Oxford University, UK
- Sand K.D. Institute of Materials Science and Technology (IMT), Friedrich-Schiller-University Jena
- Stamara G. Dept. of Materials Science and Engineering, Cornell University, USA
- Dimitrijevic M. University of Belgrade, Department of Physics, Serbia
- Hurtler P. University Hospital of Basel, Switzerland
- Nanostopoulou A. Institute of Microelectronics, NCSR Demokritos, Greece
- Gianellis E. Dept. of Materials Science and Engineering, Cornell University, USA
- Hachisone M. University Louis Pasteur - Strasbourg, France
- Komopoulos K. Dept. of Mechanical Engineering, Univ. of California at Berkeley, USA
- Keppel D. AXTRON, Germany
- Anastasiadis S.H., FO.R.T.H. & I.E.S.L., Heraklion, Greece
- Alvarez V. Dept. of Mechanical & Aeronautics Engineering, University of Patras, Greece
- Takaura Y. Physics Department, University of Minho, Portugal
- Caravantes E.G. Dept. of Information Systems & Technology Management, George Washington Univ., USA
- Tsahalidis T. Department of Materials Science and Engineering, Rutgers, State University of New Jersey, USA
- Nowak R. Faculty of Chemistry & Materials Science, Helsinki University of Technology (TKK), Finland

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- Organic Multifunctional materials
- Organic/inorganic and hybrid materials and systems
- Flexible substrates & encapsulation methods & materials
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- Self-organized molecules and systems
- Theory & modelling (materials, components and devices)
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