

Center of Excellence NAMASTE: Advanced Materials for the Future

Center odličnosti

NAMASTE

NApredni nekovinski

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TEhnologijami prihodnosti

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Ljubljana, 25. 5. 2012

Advanced Materials for the Future

CoE NAMASTE is a multi-disciplinary and trans-disciplinary consortium of research institutions and industry, who have decided to merge academic, technological and business expertise, skills, and equipment in order to foster crucial technological progress in selected areas relating to inorganic non-metallic materials and their application in **electronics, optoelectronics, photonics, and medicine**. This should lead to a substantial increase in added value, research relevance and scientific excellence.

The strategic goals of CoE NAMASTE are: continuity in research excellence, multidisciplinary interconnection, knowledge dissemination and technology transfer. Maintaining and constantly upgrading our excellence in research, technology and business are the important guidelines.

Research Projects



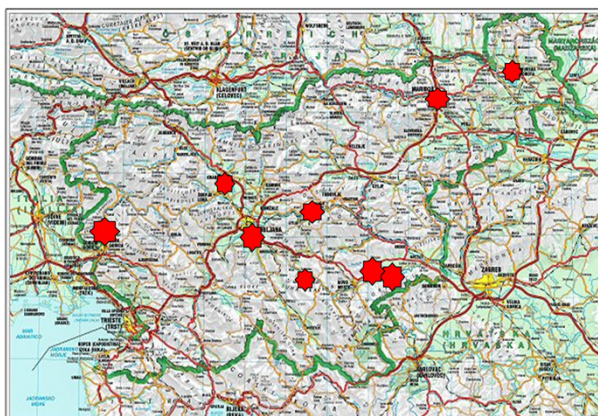
The research in the Center is conducted within six projects, which are briefly described as:

- RRP1: Ceramic 2D and 3D structures (dr. J Holc),
- RRP2: Materials for overvoltage and EM protection (doc.dr. S. Bernik),
- RRP3: Materials, micro- and nano-systems for sensors (prof. dr. J.Trontelj),
- RRP4: Soft composites for optical, electronic, photonic and sensor applications (prof. dr. S. Žumer),
- RRP5: Bioactive, biocompatible and bioinert materials (prof. dr. J. Štrancar),
- RRP6: Project of new opportunities, which allows the inclusion of new partners (doc. dr. D. Kuščer).

All of the projects are carried out with partners from the business/private sector.



The locations of CO NAMASTE partners



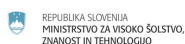
Some Financial Information



- Granted financing for 4-year operation: 9.417.264,88 EUR
- Realization in 2010 and 2011 total 5.150.149,83 EUR (54,7%)
- Investments in research equipment 3.630.887,04 Eur (84%)
(2-year plan 4.334.491,00 EUR)

Some Scientific Achievements

- 27 scientific papers with NAMASTE affiliation
- 15 patent applications (3 with NAMASTE affiliation)
- 43 conference contributions (19 with NAMASTE affiliation)

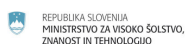


Excellent Results



Some exceptional results, such as

- the large aspect ratio of the dimensions of a buried cavity, which will make possible the fabrication of **highly sensitive ceramic membranes**;
- the new developments in materials for low-doped ZnO varistors for **high-voltage protection** and prototypes for **electromagnetic radiation protection**;
- being “world champions” in THz field detection;
- being first in the world to create a 3D microlaser;
- being the leader in studying phenomena in chiral nematic liquid crystals;
- developing new methods for **investigating the interaction between nanomaterials and living cells**.



Foreign reviewer statements 1/2



1. From the presentations during the midterm evaluation, as well as from the numerous joint publications it becomes clear that the cooperation of industrial partners and academic partners within this CoE is strong and successful even if often only in a bilateral way. It appears that many of the technologies and products developed at the research partners within this CoE can be transferred successfully to the commercial (industrial) partners.

The technological excellence of this CoE NAMASTE is clearly demonstrated by the number of innovations and patents achieved so far as well as by the number of prototypes and demonstration projects. The number of publications is remarkable and so is the rank of the journals which have been chosen for publication, including *Proc. Nat. Acad. Sci. USA*, *Nature Comm.*, *Phys. Rev. Lett.*, or *Chem. Comm.*



Foreign reviewer statements 2/2



2. CoE NAMASTE has demonstrated during the first period of operation a truly excellent performance. The organisational structure was established and implemented, and allowed for the frictionless and efficient operation of this Centre of Excellence.

3. **It is a particular strength of this CoE that it has an excellent balance between fundamental and applied research.** While the applied research delivers solutions that can be transformed into technical products or services on a relatively short timescale, fundamental research will provide the basis for future technologies which not necessarily can already be anticipated at the current time.





Knowledge Dissemination



The dissemination of knowledge – in particular teaching and lecturing – is an important activity:

- more than 40 invited researchers and lecturers have visited the center,
- there are 24 lecturers and 20 mentors of higher-education programs among the participating researchers in the CoE,
- the CoE's researchers have been invited to lecture at and chair international conferences and scientific meetings.

CoE NAMASTE has organized or co-organized:

- strategic conferences,
- seminars,
- workshops,
- international and domestic conferences,
- presentation conferences for partners exploring new ideas for development,
- invited lecture in the Slovenian Parliament by the CoE Director.



Knowledge Dissemination

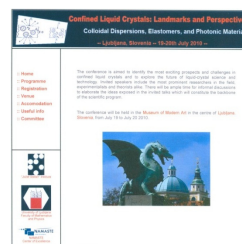
National conference

Napredni materiali s tehnologijami
prihodnosti
Ljubljana, 7-8.9.2011



International conference

Confined Liquid Crystals: Landmarks and Perspectives
Ljubljana, 19-20.6.2010



Workshop
Exploring cell-material interactions
Brje, 15.11.2010



Knowledge Dissemination



Workshop
Characterization of Materials
Rogla, 7-8. 11. 2011



- ✓ 10 tutorial lectures: optical and electron microscopy, XRD, IR, Raman microspectroscopies, EPR, AFM, Laser tweezers, nanoparticles detection...
- ✓ 106 participants (18 from industry, 26 students)
- ✓ more than 50% young generation
- ✓ the participants liked the review of the methods and their applications in practice

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Information



We invite you to visit www.conamaste.si

or,

Info@conamaste.si

THANK YOU!

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