



FP7-REGPOT-2012-2013-1

Grant Agreement: 316087

AComIn: Advanced Computing for Innovation

**FP7 Capacity Programme
Research Potential of Convergence Regions**

EVENT ORGANISATION REPORT

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Summary: Report about the organisation of the Workshop “ICT for New Materials and Nanotechnologies” (NewNano) and International Conference “Robotics, Automation and Mechatronics’13” (RAM 2013), 8-10 October 2013, Bankya, Bulgaria

Status: Final report

Distribution: Public

Issue Date: November 2013

Start date of the project: 01/10/2012

Duration: 42 months



Report about NewNano and RAM - 2013, an AComIn Supported Event

Name and type of the event:

Workshop

NewNano, “ICT for New Materials and Nanotechnologies”

Accompanying event: International Conference

RAM 2013 - “Robotics, Automation and Mechatronics`13”

<http://www.iict.bas.bg/acomin/events-8-1-Oct-2013.html>

Place, dates:

Bankya, Bulgaria

October 8-10, 2013

Programming and Organising Committees:

The Workshop “ICT for New materials and nanotechnologies” (NewNano) was organized together with the International Conference “Robotics, Automation and Mechatronics`13” (RAM 2013). The Programme Committee of the event consists of:

Chairman:

Acad. V.Sgurev – Bulgaria

Members:

G. Angelova – Bulgaria

I. Dimov – Bulgaria

V. Galabov – Bulgaria

V. Hardt – Germany

R. Hrin – Romania

A. Hunger – Germany

Y. Kanamiya – Japan

P. Kopacek – Austria

K. Kostadinov – Bulgaria

A. Kotsialos – United Kingdom

S. Margenov – Bulgaria

A. Muchtar – Malaysia

T. Neshkov – Bulgaria

G. Osipov – Russia

C. Rumenim – Bulgaria

N. Shivarov – Bulgaria

V. Slavkov – Bulgaria

B. Sokolov – Russia

Z. Sotirov – USA

G. Todorov – Bulgaria

S. Tschakarow – Germany

B. Vanev – Bulgaria

The National Organizing Committee consists of:

Chairman:

Prof. Dr. D. Karastoyanov

Members:

L. Dukovska, V. Monov, K. Stamova, S. Teodosieva

Participants /number, types/:

From IICT: 21 researchers (G. Angelova, . D. Karastoyanov, S. Fidanova, T. Atanasova, N. Panteleev, T. Boyadziev, M. Mihov, I. Altaparmakov, B. Sokolov, S. Stoenchev, D. Pirinchev, S. Arshinkov, B. Bizhev, T. Tashev, K. Kolchakov, G. Zheliazkov, D. Trihonov, G. Isaev, D. Bachvarov, T. Balabanov, S. Teodosieva)

Bulgarian participants outside IICT: 7 researchers and 6 representatives from SME

Invited participants: 3 invited speakers supported via AComIn

Short description:

New Nano & RAM 2013 has been held two days: 8 and 9 October. The event contained 11 invited talks, 11 talks of Bulgarian IICT partners and 21 oral presentations of IICT staff members. The following major scientific topics, all relating to the AComIn project activities are included: Mobile systems; Micro and nano robotics; Robot mechanisms and design; Robot perception and Control; Application of robotic and mechatronic industrial, service and personal, security and defense, academic and research; New materials; Nano technologies; Microsystems and MEMS. The papers and presentations of the IICT experienced researchers, published with the support of AComIn, were presented with slides acknowledging the project within the Workshop sessions.

Scientific Programme:

The Scientific Programme of the Workshop and conference is available at:
<http://www.iict.bas.bg/acomin/events-8-1-Oct-2013.html>

Scientific Programme of the AComIn-related activities:

The invited lecturers, supported by AComIn, gave the following presentations:

- **Prof. Dr. Sc. Ivan Yatchev** (Dean of Electro Faculty, TU-Sofia): Braille screen for blind peoples for better quality of life
- **Prof. Dr. Todor Neshkov** (IEEE, R&A Chapter, TU-Sofia): Mechatronics in the education: the experience of the Technical University of Sofia
- **Prof. Dr. Kostadin Kostadinov** (GIS Transfer Centre, Inst. of Mechanics – BAS): Mikrorobotics applications in micro-and nanotechnology

AComIn-related papers presented at the event and published after peer review:

The following AComIn-related papers will be published in the Journal Bulgarian Robotic Society (BRS):

- M. Kandeve, B. Sokolov, B. Ivanova, V. Pojidaeva, S. Stoenchev, C. Agalarev, Influence of Nano-Diamond Particles on the Tribological Characteristics of Nickel Chemical Coatings
- M. Kandeve, D. Karastoyanov, B. Sokolov, A. Dimitrova, S. Stoenchev, N. Nikolov, C. Agalarev, M. Mihov, Friction and Wear of Ni Coatings with Nanosize Particles of SiC
- M. Kandeve, S. Stoenchev, V. Pozhidaeva, D. Karastoyanov, J. Javorova, M. Mihov, G. Isaev, Composite Coatings to Improve Durability of the Working Body of the Drill
- T. Atanasova, Integration of Heterogeneous Data and Processes in Digital Home
- N. Bakanova, T. Atanasova, Data sources determination for information management in OMIS
- D. Pirinchev, B. Bizhev, S. Arshinkov, G. Zheliazkov, D. Ivanov, Architecture of a portable handheld device for remotely collecting and transmitting data
- T. Tashev, A. Bakanov, R. Tasheva, Determination of the value of convergence parameter in a procedure of calculating the upper boundary of throughput for packet switch
- V. Stavrov, D. Chakarov, A. Shulev, Ch. Hardalov, G. Stavreva, MEMS Sensors for Load Cell Applications
- P. Dolashka, Bart Devreese, Jozef Van Beeumen, New antimicrobial peptides from the extracts of garden snail *Helix lucorum*
- V. Slavkov, S. Savchev, V. Galabov, Synthesis and analysis of a manipulation mechanism with flexible unit specialized robot
- K. Zagurski, T. Boyadziev, G. Boyadziev, K. Delchev, V. Vitkov, Controlling the pressing force in an automated drilling bone
- V. Galabov, V. Slavkov, G. Slavov, S. Savchev, In Regard with the Necessity of New Approaches for Designing Mechanical Systems
- V. Galabov, V. Slavkov, G. Slavov, S. Savchev, Functional Types of Kinematic Chains and Goal Motions
- V. Galabov, I. Avramov, V. Slavkov, G. Slavov, S. Savchev, Approaches to Structural Synthesis of Path-generator Mechanisms
- V. Galabov, I. Avramov, V. Slavkov, G. Slavov, S. Savchev, Approaches for Structural Synthesis of Motion-generator Mechanisms
- K. Kostadinov, Mikrorobotika applications in micro-and nanotechnology
- A. Boneva, Z. Ilcheva, S. Angelov, D. Bachvarov, D. Georgieva, P. Gugutkov, N. Baruh, M. Michov, G. Isaev, J. Doshev, I. Stojanov, Hardware and software tools for communication area building using in project BPMIO
- D. Bachvarov, A. Boneva, B. Kirov, J. Boneva, G. Stanev, N. Baruh, Primary information preprocessing system for LP, DP devices - project "Obstanovka"
- S. Fidanova, P. Matinov, Number of ant versus number for iterations ant colony optimization algorithm for wireless sensor layout
- N. Panteleev, B. Medzhidieva, Research on electromagnetic compatibility of E/E/PE systems for industrial robots

- G. Zheliazkov, D.Ivanov, D. Pirinchev, B. Bizhev, S. Arshinkov, Methods and technologies for localization of dynamic and static objects
- N. Stoymenov, S. Gyoshev, P. Panev, L. Klochkov, B. Sokolov, Automate the packaging processes and foot surgery "CURRY" - Part 1
- N. Stoymenov, S. Gyoshev, P. Panev, L. Klochkov, C. Agalarev, Automate the packaging processes and foot surgery "CURRY" - Part 2
- T. Neshkov, L. Dimitrov, Mechatronics in the education: the experience of the Technical University of Sofia in the context of the challenges of the modern development in education and industry
- I. Altaparmakov, G. Isaev, Simulating the processes of plastic deformation with Finite Elements impact load
- M. Mihov, Goran Isaev, Management of stand to examine the effect combined impact
- D. Karastoyanov, I. Yatchev, Energy Efficient Electromagnetic Linear Drives for Braille Screen
- K. Kolchakov, V. Monov, An approach for hardware solution of the conflicts problem in switching nodes
- N. Stoymenov, S. Gyoshev, Thermography with infrared camera

Assessment of the added-value of the event to the AComIn scientific, networking and dissemination objectives:

The support, provide by AComIn to NewNano and RAM 2013, enabled:

- To cover the expenses accommodation of the keynote speakers who presented innovative aspects of New Materials and Nanotechnologies, as well as Robotics, Automation and Mechatronics.
- All participants were informed about AComIn, its objectives and results, and the possibility to apply for postdoctoral positions in the project. This improves the image of IICT as a regional Center of Excellence in New Materials and Nanotechnologies, as well as Robotics, Automation and Mechatronics.

Changes in the financial planning of the AComIn support spending (if any):

There were no changes in the budget plan, approved by the AComIn Executive Board.

Reason for the changes during the actual event implementation: N/A

Event organiser:

November 2013

Prof.Dr. Dimitar Karastoyanov