

Plenary Session of the Mechanical Engineering Committee

On May 31 – June 1, 2004, a Plenary Session of the Mechanical Engineering Committee took place in the “Rzemieslnik” Centre of Schooling and Rest in Gdańsk-Jelitkowo. The meeting was accompanied by a Scientific Symposium on “Development prospects of the machine design and exploitation after the accession to the European Union”, organised by the Institute of Fluid-Flow Machinery, PAN, Gdańsk, and two faculties of the Gdańsk University of Technology, namely the Mechanical Engineering faculty and the Ocean Engineering and Ship Technology faculty. During the Symposium, having close relation with the general topic of the MEC Plenary Session, the main introductory lectures were given on the following subjects:

- prof. Wojciech Sadowski, Vice Rector for Co-operation with Business Community and EU Projects — Gdańsk University of Technology: *Poland in European scientific and educational space*,
- prof. Jan Kiciński, Deputy Director for Scientific Issues — IFFM PAS: *Polish research space — prospects of development*,
- prof. Adam Mazurkiewicz, Managing Director of the Institute for Terotechnology: *Application trends in UE*

programmes oriented on the construction and operation of machines.

Moreover, series of papers presented the achievements of Tri-City research centres in co-operation with the European Union, as well as the co-operation of the maritime circles with NATO programmes.

The initiative aroused a great interest of the nationwide society representing the machine design and exploitation, which proves that the matters connected with European and Polish research space, especially the issues of financing research activities from structural funds, are of current interest and need detailed studies and discussion.

During the meeting a problem of post-graduate studies was raised in the context of opportunities to obtain financing from EU special resources, Marie Curie funds, for instance.

A big advantage of the meeting was also an opportunity to have discussions with people directly involved in co-operation with EU and NATO, i.e. with the Polish representative at EU, and the representative of the RP Naval Forces in NATO Headquarters.

T. Kowalewski

Actualities

We are highly honoured and proud to announce that the Chairman of our Division IV — Technical Sciences of the Polish Academy of Sciences Professor Władysław K. Włosiński has been awarded a national high rank distinction: Krzyż Komandorski Orderu Odrodzenia Polski, by the President of the Republic of Poland.

We would like to congratulate our Chairman on this special day and wish him further successes in the field of science.

We have a great honour and pleasure to announce that two full members of the Polish Academy of Sciences associated with our Division IV — Technical Sciences PAN: prof. Zbigniew Bojarski, and prof. Jan Węglarz have been awarded a national high rank distinction: Krzyż Komandorski Orderu Odrodzenia Polski, by the President of the Republic of Poland.

We would like to congratulate our professors on this special day and wish them further successes in the field of science.

We have a great pleasure to announce that Professor Tadeusz Kaczorek, full member of the Academy associated with our Division IV — Technical Sciences PAN has been honoured with the exceptional title of the Doctor Honoris Causa of the Lublin University of Technology.

Therefore we would very much like to congratulate Professor T. Kaczorek and wish him further successes.

We have a great pleasure to announce that Professor Jarosław Mikielewicz, corresponding member of the Academy associated with our Division IV — Technical Sciences PAN has been honoured with the exceptional title of the Doctor Honoris Causa of the Cracow University of Technology.

On this day we would very much like to congratulate Professor J. Mikielewicz and wish him further successes.

T. Rychter



After long phases of the proposal evaluation and contract negotiations with the European Commission the Project of *Network of Excellence on Knowledge-based Multicomponent Materials for Durable and Safe*

Performance (KMM-NoE) has been accepted for financing by the EC within the 6. Framework Programme and will start its activities in autumn 2004. The *KMM-NoE* consists of 36 institutional partners from 10 countries representing leading European research institutes, university departments, SMEs and large industry in the field of knowledge-based multicomponent materials (collectively *KMM*). The *KMM* are advanced materials designed for enhanced performance in highly demanding loading and environmental conditions like thermo-mechanical and impact loading, high strain rates and temperature regimes, aggressive chemical environment, and combinations thereof. Such regimes are typical of applications in aerospace and automotive industry, turbo-machinery industry, tribology, chemical industry, electronic devices, biological implants, microsensors, household appliances etc. The representatives of *KMM* are intermetallics, metal-ceramic composites, functionally graded materials and thin layers. These are materials with high knowledge contents devised and tailored in research labs to arrive at desired physico-chemical properties that are well beyond the performance limits of traditional materials.

The main goal of the *KMM-NoE* Project is to mobilise and concentrate the dispersed scientific potential in the *KMM* field to create a durable and efficient organism capable of developing leading-edge research while spreading the accumulated knowledge outside the Network and enhancing the technological skills of the related industries. The *KMM-NoE* will concentrate on understanding, designing and developing novel knowledge-based multicomponent materials with superior properties like low density, high strength and hardness while fulfilling some

specific functionalities like excellent performance in high-temperature regimes, enhanced fracture toughness and fatigue lifetime, superior resistance to wear, corrosion and oxidation.

The joint programme of activities of the *KMM-NoE* consists of integrating, jointly executed research, spreading of excellence and management activities divided into Workpackages containing specific Tasks. The integrating activities comprise the strategy-making and Network integration activities. The strategy-making activities set out directions of progressive integration and build up a potential for long lasting integration following three logical phases of integration: activation, strengthening, consolidation. The integration activities are permanent tools aimed at integration of research facilities and equipment, exchange of researchers and research groups, technology transfer (*Competence Centre*) and *Intranet*. The jointly executed research activities include processing of *KMM*, microstructural characterisation and modelling of *KMM*, industrial applications and standardisation of *KMM*. The spreading of excellence activities comprise training of researchers (*Integrated Post-Graduate School*), dissemination of knowledge in industry, foresight studies to evaluate technological needs and developments. Two external networks: *External Research Network* and *External Industrial Network* will be created for dissemination and training activities outside the *KMM-NoE*.

The long-term strategic goal of the *KMM-NoE* is to establish a self-supporting pan-European institution in the field of knowledge-based multicomponent materials: *KMM Virtual Institute*. It will combine industry oriented top class research with educational and training activities. The *KMM Virtual Institute* will rest on three main pillars: *KMM European Competence Centre*, *KMM Integrated Post-Graduate School*, *KMM Mobility Foundation*.

The *KMM-NoE* will be coordinated by the Institute of Fundamental Technological Research (IPPT) of the Polish Academy of Sciences, Warsaw, Poland.