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It was said...

Dr John C. Mather
Senior Astrophysicist at NASA’s Goddard Space Flight Centre, Greenbelt, MD, USA,
The Nobel Prize Winner in Physics 2006 for the discovery of the blackbody form and anisotropy of the cosmic microwave background radiation

You might ask, why is light so important, that it is the subject of 14 previous Nobel Prizes, including one for the discovery of this very same primeval radiation? That is like asking, why is there a universe to explore, or what was there before the Big Bang? Everybody asks that question, but I don’t have an answer. When, or if, we do have an answer, I am pretty sure that the Nobel committee will consider it an important discovery. Light gives us life through photosynthesis, it fills one of our only five senses, it lets us see back in time towards that cosmic big bang, and it helps us communicate with the other sentient beings here on earth, and maybe in outer space, though the odds of finding those other beings are small. Christer Fuglesang, Sweden’s first astronaut, is helping us start our trip into the solar system, and we use radio, which is a form of light, to talk to him. Einstein studied light to develop the theory of relativity, believing that the laws of nature that give us light must surely be true no matter how fast we are moving. And now we know that even electrons and protons behave a lot like waves of light, in ways that continue to astonish us. They give us the basic laws of chemistry and lead to the complexity of biology and eventually to that incomprehensible consciousness that brings us together here tonight.

From Dr John C. Mather’s banquet speech delivered at the Nobel Banquet on 10 December 2006 in Stockholm, Sweden (published by The Nobel Foundation 2006), photo by NASA
**Editorial**

The given issue of Archives of Materials Science and Engineering is handed to P.T. Readers in August 2007. August is a holiday month in Poland. In many Universities after the finished classes of the given academic year and the outcarrying of the recruitment of candidates for the first year of studies, scientific staff go for well-deserved holidays and the part of them go to scientific conferences which take place in some countries in that period. However, the turn of August and September is traditionally the period of the implementation of organisational changes in many Polish Universities. That is why on 1st September there is an anniversary of the creation of many organisational units in many Polish Universities.

The Institute of Engineering Materials and Biomaterials of the Silesian University of Technology in Gliwice, Poland (the IEM&B of the SUT) was founded 10 years ago just on 1st September 1997 and since then as a result of election and then yet for three time after the end of the next cadencies its management was entrusted to me. That event is worth mentioning in the subsequent Issue of Archives of Materials Science and Engineering because since the beginning of the present year it is the staff of that unit supporting me personally as an Editor-in-Chief of Archives of Materials Science and Engineering as an International Scientific Journal, who have taken the responsibility for its further fate for what I am very thankful to them. The Institute of Engineering Materials and Biomaterials of the Silesian University of Technology in Gliwice, Poland is a successor of the Department of Physical Metallurgy founded on 24th May 1945 together with the Silesian University of Technology and directed for almost a quarter of the century by Prof. Fryderyk Staub, Dr h.c. who transferred here traditions of Lvov University of Technology as the biggest pre-war Polish university of technology. The Department of Physical Metallurgy was next transferred to the Institute of Physical Metallurgy and Welding, and then the one of Physical Metallurgy directed for 16 years by Prof. Łucja Cieślak and then by Prof. Jan Marciniak and Prof. Jan Adamczyk.

In the period of last 10 years the dynamic development of the scientific staff in the Institute of Engineering Materials and Biomaterials specialising in the field of materials science which at present employs ca. 20 professors and habilitated doctors and ca. 75 doctors and ca. 40 PhD students and ca. 15 persons of the administrative and technical staff has been taking place. In the period of over 60 years a few thousand of BSc and MSc engineers specialised in various fields dealing with those fields of science but formally in the field of Mechanics and Machine Building, Automation and Robotics, Management and Production Engineering and Technical and Computer Science Education out of which about a half have been educated for last 10 years. At the beginning the scientific interests of the staff of the Department of Physical Metallurgy, the Institute of Physical Metallurgy and Welding and the Institute of Physical Metallurgy concerned manufacturing, processing and heat and surface treatment and the behaviour in exploitation conditions and also methods of steel and other iron alloys researches. During the last 10 years the present divisions and the then Department of Foundry transferred from the Institute of Foundry, and also the then Division of Processing and Application of Plastics earlier joined with the Division of Plastic Processing of Metals were joined. At present into the scope of interests of the scientific staff of the Institute of Engineering Materials and Biomaterials there are included all the groups of engineering materials such as: metal, ceramic, polymer and composite ones, and also engineering, constructional, tool, special and functional together with biomimetic, intelligent and nanostructural ones together with the full range of materials processing technologies, methodology of materials design including computational materials science and suitable research methods.

This year for the first time in over 60-year history of the Institute conditions for the foundation of the branch of studies: Materials Engineering appeared in the Faculty of Mechanical Engineering of the Silesian University of Technology in which the Institute is the biggest internal unit. Many factors both external and internal ones have an influence on such an advantageous decision. In order to use that decision the creation of two new and unique in the State scale macro-branches of studies: “Applied Computer Science with Computational Materials Science” and “Nanotechnology and Materials Processing Technologies” combining in each case curriculum requirements for two component branches of studies which curriculum contents is its basis that is of “Materials Engineering” and respectively “Technical and Computer Science Education” and “Mechanics and Machine Building” were proposed. Those totally original curriculum proposals were approved in April 2007 by the Council of the Institute of Engineering Materials and Biomaterials specialising in the field of materials science which at present employs ca. 20 professors and habilitated doctors and ca. 75 doctors and ca. 40 PhD students and ca. 15 persons of the administrative and technical staff has been taking place. In the period of over 60 years a few thousand of BSc and MSc engineers specialised in various fields dealing with those fields of science but formally in the field of Mechanics and Machine Building, Automation and Robotics, Management and Production Engineering and Technical and Computer Science Education out of which about a half have been educated for last 10 years. At the beginning the scientific interests of the staff of the Department of Physical Metallurgy, the Institute of Physical Metallurgy and Welding and the Institute of Physical Metallurgy concerned manufacturing, processing and heat and surface treatment and the behaviour in exploitation conditions and also methods of steel and other iron alloys researches. During the last 10 years the present divisions and the then Department of Foundry transferred from the Institute of Foundry, and also the then Division of Processing and Application of Plastics earlier joined with the Division of Plastic Processing of Metals were joined. At present into the scope of interests of the scientific staff of the Institute of Engineering Materials and Biomaterials there are included all the groups of engineering materials such as: metal, ceramic, polymer and composite ones, and also engineering, constructional, tool, special and functional together with biomimetic, intelligent and nanostructural ones together with the full range of materials processing technologies, methodology of materials design including computational materials science and suitable research methods.

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The issues concerning the developmental technologies of new interdisciplinary industrial sectors using intensively the results of scientific research and developmental works enabling the productivity growth and the contribution of innovative products and constant decrease of technological home industry in the relation to the European Union put the requirements of all institutions and units being a carrier of economy knowledge-based including higher education. Of course, it can be realised autonomic decisions of the Council of the Faculty of a particular University. Such a decision was also made by the Council of the Faculty of Mechanical Engineering of the Silesian University of Technology from the initiative of the Institute of Engineering Materials and Biomaterials proposing the creation of above mentioned new and attractive branches of studies. It is a peculiar gift prepared on the occasion of the 10th anniversary of that unit.

The staff of the Institute of Engineering Materials and Biomaterials and especially of the Division of Materials Processing Technologies, Management and Computer Techniques in Materials Science prepared numerous scientific papers published this year among others in Archives of Materials Science and Engineering. I am convinced that they are an interesting reading for P.T. Readers of the Journal. In the present year the staff of the Institute of Engineering Materials and Biomaterials put significant efforts in the promotion of the scientific achievements including also their own ones through the organisation of the few scientific conferences having important worldwide meaning. Because since 10 years I have been managing that group I thank sincerely my co-workers for the great professional input and congratulate them sincerely the achievements they have achieved so far, wishing them such fruitful results in the future. I encourage P.T. Readers to the cooperation with us, declaring the readiness for such a cooperation and counting on its synergic effects.

Faculty of Mechanical Engineering of the Silesian University of Technology

Glowne, in 2007
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