



COST Action 540 »PHONASUM«



PHOTOCATALYTIC TECHNOLOGIES AND NOVEL NANOSURFACES MATERIALS – CRITICAL ISSUES

2nd meeting of Working Group 2

PHOTOCATALYTICAL APPLICATIONS, STANDARDIZATION AND TESTING METHODS

**Hotel Vltava, Rez u Prahy, Czech Republic
19-20 April 2007**

The workshop is focused on standardization of testing methods in Europe, harmonizing of ISO activities with CEN approach and with the needs of industrial partners. There is mutual understanding why harmonized standard testing methods are needed. Photocatalytic market is expanding in Europe, however, many industrial partners involved in the field of photocatalytical applications have problems how to present their products to the customers and to prove them the function of their products by accepted testing methods. Up to now there are no European standards and there is only little knowledge about proposals of ISO testing methods that are currently under consideration mainly as a result of Japanese initiatives. We need to open more broader dialogue with industry and to harmonize work on existing testing methods in academia with the needs of bussiness community. During the meeting representatives and experts from COST 540 European countries will give brief survey about situation regarding photocatalytic applications and testing towards industrial applications in their countries. In addition, chairman of CEN/STAR Dr. Gérard Riviere and experts in the field of photocatalysis and ISO methods from Japan (Dr. Koji Takeuchi, Mr. Tatsuya Imura, Mr. Shig KATO) and Taiwain (Prof. Antony Shiaw-Tseh Chiang) accepted invitation to attend the meeting. We have also invited industrial partners involved in the field of photocatalytical applications in Europe. It is believed, that this workshop will significantly contribute to the establishing of broadly accepted European strategy towards standardization of testing methods in the field of photocatalysis.

Location: Meeting will be held in [Hotel Vltava](#) - located in a picturesque valley on the banks of the Vltava river 11 km north of Prague city center. Hotel is easily attainable via the D8 motorway or by train from Masarykovo railway station in the center of Prague (cca 20 min.). More information about hotel at WWW: <http://www.hotel-vltava.eu/en/>. Hotel address: Rez u Prahy (Phone/Fax: +420 - 220940759, E-mail: vltava@mhotels.cz).

Organizer: Dr. Frantisek PETERKA, ATG-NANOPIN, Czech Republic (E-mail: fpet@mbox.vol.cz)

Workshop fee: Free for COST540 members, CEN and invited guests. Academia 75 EUR, industry 150 EUR (to be paid during the meeting). Fee includes 2 lunches and coffee breaks.

More details at: www.cost540.com

FINAL PROGRAMME

Thursday, April 19, 2007

- 8:30 - 8:40 **Opening Addresses**
- 8:40 - 9:00 **Introduction of COST 540 Program and Its Goals**
Frantisek PETERKA, Research Centre for Nanosurface Engineering - NANOPIN, Czech Republic
- 9:00 - 10:30 **Photocatalytic Technologies, Commercial Products and Related Testing Methods in COST 540 European Countries. State of Art, Problems and Outlook to Future**
Reports by representatives and experts from COST 540 countries - 1st Part
- Photocatalytic Materials and Applications in Austria**
Günther RUPPRECHTER, Vienna University of Technology, Vienna, Austria
- Survey of Belgium's Activity on Photocatalysis**
Benoît KARTHEUSER, Centre de Ressources Technologique en Chimie (CERTECH), Belgium
- Photocatalytic Technologies and Expertise, Commercial Products and Activities Related to Testing Methods. Situation in Spain**
Jose Carlos CONESA, Inst. de Catálisis y Petroleoquímica (CSIC), Madrid, Spain
- Photocatalytic Companies in Germany**
Ralf DILLERT, Gottfried Wilhelm Leibniz Universität, Hannover, Germany
- Recent Photocatalytic R&D Activities in Slovenia**
Andrijana Sever SKAPIN, Slovenian National Building and Civil Engineering Institute, Ljubljana, Slovenia
- Photocatalytic Research and Applications in Greece**
Christos TRAPALIS, Institute of Materials Science, NCSR Demokritos, Attikis, Greece
- 10:30 - 11:00 *Coffee break*
- 11:00 - 13:00 **Photocatalytic Technologies, Commercial Products and Related Testing Methods in COST 540 European Countries. State of Art, Problems and Outlook to Future**
Reports by representatives and experts from COST 540 countries - 2nd Part
- Review of Research in the Republic of Ireland on Photocatalytic Materials**
John COLREAVY, Centre for Research in Engineering Surface Technology (CREST), Dublin, Ireland
- Standardization: The Needs**
Claudio MINERO, Università di Torino, Torino, Italy
- Standardization – Photocatalytic Research in Finland**
Tapio MÄNTYLÄ, Tampere University of Technology, Tampere, Finland
- Photocatalytic Research and Technologies in Portugal**
Carlos José TAVARES, University of Minho, Guimaraes, Portugal
- Photocatalysis in Poland**
Beata TRYBA, Szczecin University of Technology, Szczecin, Poland
- Characterisation and Photocatalytic Activity of Some Undoped and Doped TiO₂ Materials**
Florin Dan VASILIU, National Institute of Materials Physics, Bucharest–Magurele, Romania

Modification of TiO₂ Following Exposure to Laser Sources

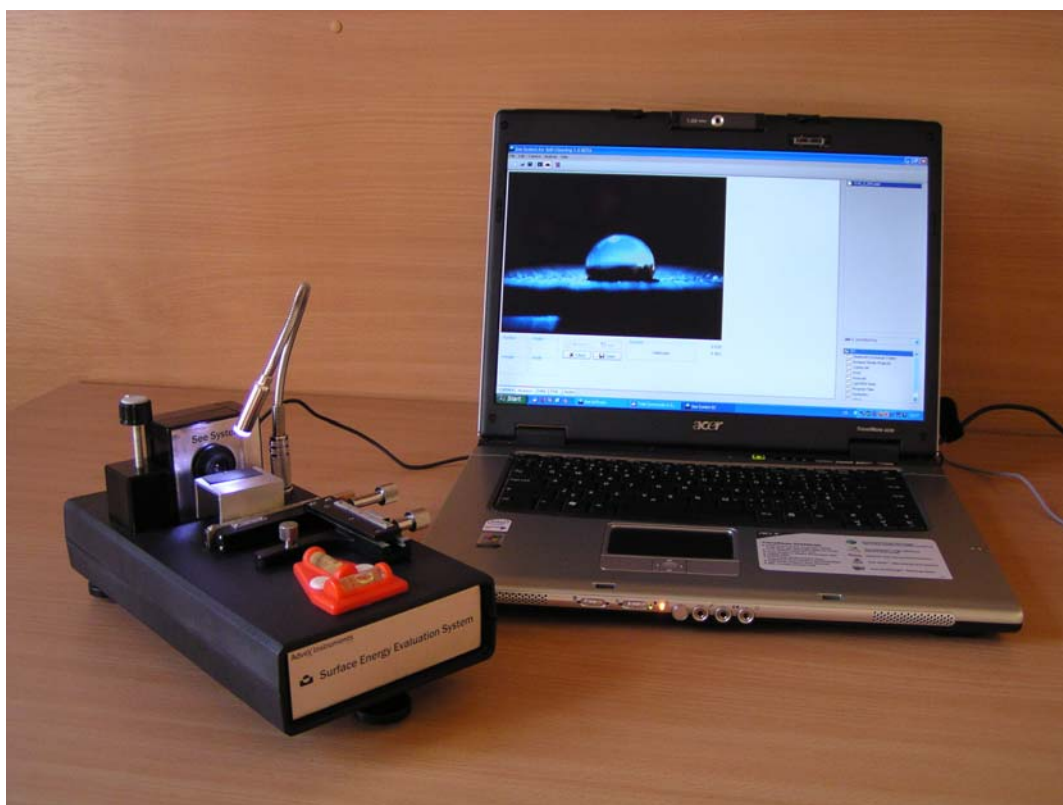
Cathy MCCULLAGH, The Robert Gordon University, UK

- 13:00 - 14:00 *Lunch*
- 14:00 - 14:30 **State of Art of Photocatalytic Applications in Japan**
Shigekazu KATO, vice chairman of International Committee of Photocatalysis Industrial Association Japan
- 14:30 - 15:00 **Status of ISO Standardization in Photocatalytic Field Initiated by Japan**
Koji TAKEUCHI, Research Institute for Environmental Management Technology (Emtech), National Institute of Advanced Industrial Science & Technology (AIST) Tsukuba, Japan
- 15:00 - 15:30 **Current Status on Photocatalytic Application and Testing Methods in Taiwan**
Antony Shiao-Tseh CHIANG, president of Taiwan Photocatalyst Industry Association, Taiwan
- 15:30 - 16:00 **Standardization as Tool to Diffuse Research Results and to Promote Innovation in Europe – Introduction of CEN, CEN/STAR, ISO-CEN Relation**
G rard RIVIERE, President of CEN/STAR
- 16:00 - 16:30 *Coffee break*
- 16:30 - 16:50 **Development of Test Methods for Photocatalytic Air Purification Materials as JIS and ISO Standardization Activity**
Koji TAKEUCHI, Convenor, ISO/TC 206/WG 33&37, Research Institute for Environmental Management Technology (Emtech), National Institute of Advanced Industrial Science & Technology (AIST) Tsukuba, Japan
- 16:50 - 17:10 **Development of ISO Standard for Self Cleaning of Photocatalytic Materials**
Tatsuya IMURA, chairman of Standardization Committee of Photocatalysis Industrial Association Japan
- 17:10 - 17:30 **Introduction of Evaluation System Designed for ISO Self Cleaning Method, Practical Demonstration**
Pavel STAHEL, Advex Instruments s.r.o., spin-off company of Masaryk University, Brno, Czech Republic
- 19:00 **Dinner**

Friday, April 20, 2007

- 8:30 - 9:00 **Information about CEN System and Possibility to Propose CEN Photocatalytic Standards, Harmonizing CEN with ISO**
G rard RIVIERE, President of CEN/STAR
- 9:00 - 9:20 **Photodegradation of Methylene Blue in Water: A Standard Method to Determine the Activity of Photocatalytic Coatings?**
Ralf DILLERT, Gottfried Wilhelm Leibniz Universit t, Hannover, Germany
- 9:20 - 9:40 **Fundamental Approach to Photoactivity Tests**
Jaromir JIRKOVSKY, J. Heyrovsky Institute of Physical Chemistry AS CR, NANOPIN, Czech Republic
- 9:40 - 10:00 **Testing Methods for Determination of Anti-Bacterial Activities of Different Coatings**
Martina BERGANT, University of Nova Gorica, Slovenia
- 10:00 - 10:20 **Strain Analysis of Photocatalytic TiO₂ Thin Films on Polymer Substrates**
Carlos Jos  TAVARES, University of Minho, Guimaraes, Portugal

- 10:20 - 10:40 **Photocatalysis of NO_x Using Paint Films**
Adelio MENDES, University of Porto, Portugal
- 10:40 - 11:00 *Coffee break*
- 11:00 - 11:20 **A complementary Approach for Photocatalytic Testing ? Na-induced Changes in Photoluminescence of TiO₂-Based Materials**
Alexander RISS, Institute of Materials Chemistry, Wien, Austria
- 11:20 - 11:40 **Experience and Capabilities of the PSA Pilot Plant Testing**
Pilar FERNANDES, CIEMAT – Plataforma Solar de Almería, Spain
- 11:40 - 12:00 **Photocatalytic Applications in the Textile and Construction Fields**
John KIWI, EPFL Lausanne, Switzerland
- 12:00 - 13:00 **Panel discussion. Meeting conclusion.**
- 13:10 - 14:00 **Lunch**
- 14:00 - 15:30 **Optional program - Excursion to Research Institutes Rez**



Evaluation device for proposed ISO standard testing method of self cleaning performance of semiconducting photocatalytic materials based on **Surface Energy Evaluation System (SEES)** designed by Masaryk University Brno, Czech Republic. SEES is portable instrument for quick and easy contact angle measurement and surface energy calculation. For the proposed ISO standard method the SEES was modified in cooperation with the experts working in the photocatalytic field from the Czech Research Centre for Nanosurface Engineering - NANOPIN (www.nanopin.cz). Device will be commercially available in the second half of 2007.