NEW SOLAR-THERMAL COLLECTOR FOR FACADES INTEGRATION

In the Ion Heliade Radulescu amphitheater, the Romanian Academy of Science organized, on June 20, a workshop opened to the Romanian groups active in the research on solar-thermal conversion. During the workshop the new concept of solar-thermal facades was presented, as developed in the Renewable Energy Systems and Recycling Centre, in the R&D Institute of the Transilvania University. New types of solar-thermal collectors, with trapeze shape and colours with increased architectural acceptance were developed in the EST IN URBA Project (PNII Cooperaon, 28/2012). The steps followed up to the development of the demonstrator raised the parcipants interest and generated a stream of novel ides for increasing the building integration of the solar-thermal systems.

PHOTOCATALYTIC SYSTEMS INTEGRATED IN NEW AND SUSTAINABLE PRODUCTS

New, efficient, feasible and market accepted solutions are intensively investigated all over the world for the photocatalytic systems and this topic is approached also in the R&D Centre Renewable Energy Systems and Recycling. The innovative features of our results were confirmed by two new PN II Cooperaon projects which were recently granted.

- The first project, coordinated by Prof. dr. Maria Visa proposes an integrated system materials – technology – process for advanced wastewater treatment in an energy autonomous pilot, powered by a renewable energy mix.
- The second project, coordinated by Prof. dr. Dana Perniu proposes the use of photocatalytic films for military suites decontamination used in regions where chemical and biological weapons were used along with a mobile powering solution of the photocatalytic system, based on renewables.

Both projects have as partners Romanian companies, universities and R&D Institutes, allowing a complex research that can represent a starting point for other research consortia.
Ageing tests are an essential part of the research aiming at developing, testing and assessing the methods for conservation-restoration, targeting information on the behaviour in real utilisation conditions for the estimation of life duration has significant scientific argumentation. The natural predisposition of materials toward degradation due to various biotic or abiotic factors leads towards specific modifications, brought by alteration processes of chemical or physical nature. The new materials studied to be implemented compels for their testing in various „real” conditions that can be simulated in the *Environmental Simulation* climatic chamber installed in the laboratory. Testing the behaviour in time targets the evaluation of the effective stability of various materials and wood samples under the influence of environment conditions like oxygen, light, temperature, humidity, chemical stability as well as surface quality. These are the reasons why resistance to ageing tests of over 20 indigenous and exotic wood species important for historic furniture is investigated. Samples undergo controlled climatic cycles including rain and UV radiations. The changes in color of the samples after testing, as well as the modification of their chemical structure were determined by UV-VIS spectrometry for color measurements and by FTIR – ATR spectrometry for chemical investigations. The quality of the unfinished sample surface, modified under the influence of temperature, humidity and UV radiations was evaluated through roughness measurements before and after the ageing cycles, with the *MarWin Roughness Tester*.

**R&D Centre: Furniture Eco-design, Restoration and Certification in Wood Industry**

*Prof.dr.eng. Marina Cionca, Coordinator*

*Researcher dr.eng. Anca Varodi*

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**NEW RESULTS IN WOOD ENGINEERING**

Lately, research focused on the investigations in the field of wood engineering lead to a patent application on lingo-cellulosic panels with plastic inserts and the completion of the Ph.D. thesis entitled “Valorization of hemp flakes (*Cannabis sativa L.*) by embedding them in filling material and used for building panelling” issued by Eng. Maria Adriana Gherghișan under the scientific coordination of Prof.dr.ing. Ivan Cismaru.

Significant results were published as *Wood - Plastic Composites from Waste Materials Resulted in the Furniture Manufacturing Process*, in the PROLIGNO Journal, Vol. 10(2), authors Coșereanu, C. and Lica D and Eng. Olărescu Cristina, as a doctoral student, has extended the experimental research on the edge-to-edge jointed panels made from thermo-wood obtained from spruce wood. They were tested to dimensional and shape stability and their color modification was investigated. The climate chamber, photo-spectroscopy apparatus and the equipment for determining the precision accuracy of the panels are the basic equipment used for the determinations, and they are placed in the frame of ICDT.

**R&D Centre : Innovative Technologies and Advanced Structures in the Wood Industry**

*Assoc.Prof.Dr.Eng. Luminița Brenci, Coordinator*
The Pilot project – “Intelligent Destination Management for a Sustainable Tourism” was recently granted in the frame of the PNII Partnership Romanian Programme. Under the coordination of Prof. dr. Gabriel Bratucu (Transilvania University Responsible Lect. Dr. Laura Cizmaru), the 1.2 Mill. Lei project aims at conceiving and developing an original technical procedure for testing the European System of Touristic Indicators for Sustainable Destinations (ETIS 2013) in the Brasov County. This will be achieved through an innovative informatics system with a GDSS decision support (as functional model), able to directly and actively uphold the participative management of a sustainable tourism for the Brasov destination. The innovative informatics system will be supported by: a data basis (secondary and primary data) related to the European Touristic Indicators for Sustainable Destinations (ETIS 2013) applied to Brasov County, a specialty knowledge basis in the field of sustainable development management of tourism, a basis of models and algorithms used for data processing and a geographical informative sub-system (GIS) allowing to realize the thematic maps with the main indicators included in the project. An integrated web platform will assure testing if the DIMAST system is functional. Given the collaborative nature of the informatics system, the project envisages two categories of potential users as direct beneficiaries and two categories of potential users as indirect beneficiaries. In order to ensure a high level of representation of all potential users’ interests, the DIMAST project is developed through an active public-private partnership between the representatives of the main beneficiaries and the soft company SC BIT Software SRL. DIMAST is thus a pilot-project, running during July 2014 – September 2016, proposing a sustainable management of touristic destinations at European level, this being the reason why the project intends to make its results highly transferable.

Cooperation project with the Brasov County Council: “Market Study for estimating the cargo traffic in the area covered by Brasov International Airport”: aiming at obtaining relevant information regarding companies’ intentions of utilizing air cargo transport in the area covered by Brasov International Airport. The research team of the Faculty for Economic Sciences and Business Administration is coordinated by Associate Professor, Ph.D. Gheorghita Dinca as project manager and identified a significant demand for cargo air transport, which will help completing the investment activities of the second stage of the airport construction, consisting of the achievement of airport facilities for the necessary logistics of this transport type. In the third stage, developing the cargo air transport activities will generate additional revenues for Brasov-Ghimbav International airport and implicitly an easier repayment of the whole investment’s costs. The research results have been already supplied to the partner and will be disseminated through a series of scientific papers.

HORIZON 2020 PROPOSAL: H 2020 EURO-SOCIETY - 2014-07-23, “European Network of Cooperation on Resilient Economic & Monetary Union (ENCORE_EMU)” – submitted in June 2014: Coordinator: University of Piraeus, Greece; Partners: University of Torino, University of Paris X, Ouest Nanterre la Defence University Paris 8, Warsaw School of Economics, Transilvania University of Brasov, University of Craiova, University of Nis, Berlin School of Economics and Law. The project is proposed to cover 4 years and the Brasov team is coordinated by Prof. dr. Ileana Tache.

R&D Centre for Economic Research
Prof. dr. Ileana Tache, Coordinator
On May 14, a workshop was organised in the R&D Institute as part of the promotion campaign of the new instruments of the Structural Funds during 2014 – 2020. The team of the National Education Ministry was coordinated by the General Director Dana Gheorghe who presented the new opportunities offered by the Operational Programme Competitiveness to a highly interested public.

The major fields of the national research strategy were outlined: Bioeconomy, Information and Communication Technology, Space and Security, Energy, Environment and Climatic Changes, Eco-nano technologies and Advanced materials, Health (national priority domain). The participants from companies, R&D institutes and universities from the 7-Centre Region had a vivid dialogue on the presented topics and on the supporting instruments for the new projects.

Prof. dr. eng. Ion Vişa
General Manager of the R&D Institute of the University

On May 13, The R&D Institute of the Transilvania University of Brasov hosted a meeting of gathering the coordinators of the research centers and decision makers of the entities part of the ETREC Cluster. The meeting was organised to actively promote the research offer of the Institute and to identify subjects of joint interest with the companies, institutes and associations that participated to the event: SC. Electroprecizia SA, Camera de Comerț și Industrie Braşov, Institutul Național de Autovehicole Rutiere, SC. District SRL – Brașov, SC. EP Cast Production SRL, SC. EP Automotive Equipment SRL, SC. EP Electrical Equipment SRL, SC. EP Electrical Motors SRL, SC. EP Tools Production SRL, Liceul ind. “Victor Jinga” – Săcele, SC. Real Project SRL, SC. Metromat SRL, SC. Tehmin SRL – Bod, SC Avantec Stamping Tools SRL, SC Autoliv Romania SRL, Asociația ASCRET.

The presentations were followed by visits in the R&D Centres where discussions were developed on specific topics that opened new cooperation paths.

Prof. dr. eng. Anca Duţă
Scientific Manager of the R&D Institute
INTERNATIONAL SUMMER SCHOOL: SMART METROPOLITAN REGIONS OF TOMORROW

During 14 – 27 July, the R&D Centre Renewable Energy Systems and Recycling co-organised with the European Sustainable Energy Innovation Alliance (ESEIA) the 2nd edition of the summer school "Smart Metropolitan Regions of Tomorrow", aiming at providing high level training on the technical, social, societal and political aspects that are supporting the development of smart and sustainable communities. The participants came from Armenia, Austria, Georgia, Hungary, Moldavia, The Netherlands, Poland and Romania targeting the development of specific projects under the supervision of lectures from The Netherlands (Prof. Yoram Kroezer), Lituania (Prof. Gintaras Stauskis), Portugal (Prof. Teresa Ponce de Leao), Austria (Prof. Joachim Fickert, Brigitte Hasewend and Richard Wheeler) and Romania (Prof. Ion Visa, Prof. Mircea Neagoe, Prof. Anca Duta and Lect. Bogdan Burduhos). The summer school included visits to the Viessmann company, to the largest PV park in Romania (in Ucea de Sus), to the Avrig Sustainable Community and a one-day workshop in the R&D Institute of the Transilvania University. Besides its educational role, the summer school allowed to identify common subjects for new EU project proposals.

R&D Centre: Renewable Energy Systems and Recycling
Prof. dr. eng. Ion Vişa,
Summer school coordinator
Prof. dr. eng. Mircea Neagoe,
Prof. dr. eng. Anca Duță
On May 8th-9th, the Theatre of Transilvania University of Brașov hosted the 11th edition of National University Colloquium for Contemporary Romanian Literature, organized by the Faculty of Letters and supported by Brașov City Hall. Carrying on the tradition established by the late Professor Andrei Bodiu, this year’s symposium invited two remarkable personalities of contemporary Romanian literature in the field of Criticism, Literary Theory and History, Mircea Martin and Paul Cornea. The specificity of this scientific event lies precisely in the presence of special guests, their work being the subject of the papers. Teachers, researchers and students from 12 universities joined Mircea Martin and Paul Cornea.

The opening speech made by Adrian Lăcătuș, the dean of the Faculty of Letters, commemorated two important poets and Emeritus Professors of the Faculty of Letters, Alexandru Mușina and Andrei Bodiu, who prematurely passed away last year. Dr. Ioan Vasile Abrudan, Rector of Transilvania University of Brașov, spoke about the tradition and the cultural impact of the National Symposium organized by the Faculty of Letters.

Introduced by Adrian Lăcătuș and Virgil Podoabă, Paul Cornea and Mircea Martin spoke about the special relationship they have had over time with our Faculty of Letters. The first day was dedicated to the students’ presentations, which embodied various topics on the work and interests of the two guests. They were followed by a roundtable on the “Editorial Year 2013”.

The papers and presentations of the second day included contributions from professors and researchers, mainly focused on the intellectual influence of the two guest-professors who have shaped the academic practice and perspective of many generations of Romanian scholars. The last part of the colloquium was dedicated to a dialogue, rich in evocations and ideas, with Mircea Martin and Paul Cornea. Through this National University Colloquium for Contemporary Romanian Literature, our Faculty of Letter has shown once again that Brașov is a landmark of excellence on the Romanian cultural map.
On May 8, Dr. Heinrich PETRA – coordinator of the MINI project in the BMW company visited the laboratories of the two R&D centres, the equipment, testing rigs and the software which were subject of interest towards a possible cooperation. Following subjects were particularly analysed: the quality of the projects run in the past 5 years, examples of products developed for economic partners in Romania and EU, the professional expertise of the M.Sc and Ph.D students, of the researchers and of their mentors, international cooperation, availability of the research staff for cooperation with BMW and its partners. Several proposals were formulated at the end of the visit aiming at implementing a frame for specific projects' development: optimizing the combustion in Diesel engines and modelling and optimisation of novel composites reinforced with carbon fibers. These two topics will be detailed analyzed and planned in the future meetings in Munich, Styer and Graz.

R&D Centre: High-Tech Products for Automotives
Prof.dr.eng. Anghel Chiru, Coordinator

Following the invitation of Prof. dr. Abdelatif MIRAQUI – the President of the „Cadi Ayyad” University of Marrakech, prof.dr.ing. Anghel Chiru made a visit in the second half of May. Besides the host university other academic institutions and R&D entities were visited: The Technology School of Essouira; The R&D laboratories in Asni; Mohammed V Souissi University of Rabat; the faculties of Mechanical Engineering and Manufacturing Engineering from Rabat-Sale; the faculty of Sciences and Technic in Gueliz; the National School for Applied Sciences in Marrakech; the R&D Centres for engineering sciences, materials science, fluids mechanics, energetic, automation, environment and transfer processes.

The results of the visit are a Cooperation Agreement signed among the two universities: an M.Sc. course in Automotives will be launched in cooperation, and four research subjects could be outlined in joint cooperation, targeting composite materials. Also proposal were done for extending cooperation in didactics, for students and staff exchange and a programme was initiated supporting young researcher to apply for Eugen Ionesco scholarships. In the autumn of 2014, a visit of the representatives of the Cadi Ayyad University is expected in Brașov.

R&D Centre High-Tech Products for Automotives
Prof.dr.eng. Anghel Chiru, Coordinator
The topic of the latest IADA workshop – (Inter)faces of dialogue: Constructing identity through language use – that was organized at Transilvania University of Braşov (Romania), between 5-7 June 2014, started from the premise that there are various ways people talk, dress or behave and, in doing so, they are displaying various identities. There are multiple identities – some of them are wanted, while some others are unwanted – and a speaker faces a dilemma to choose the best identity for a certain situation and this “browsing” of identities may be achieved through dialogue. In approaching the topic of this workshop, we start from the idea that humans are dialogic beings, users and learners of language in various contexts. While acting and reacting in ever-changing environments (interpersonal or institutional), people try “to achieve more or less effectively certain purposes in dialogic interaction” (Weigand 2008: 3).

The papers presented at this workshop looked at the ways in which identity is created and reflected in dialogic action games. There were 56 individual and co-authored presentations. The presenters came from Europe (Czech Republic, France, Germany, Hungary, Israel, Italy, Poland, UK), from the Americas (Brazil, Canada, Mexico, USA) and even from Asia (Singapore, Taiwan).

The workshop also included 4 plenary presentations which were delivered by Edda WEIGAND (University of Münster, Germany) – Identity as a dialogic concept, Jean-Michel ELOY (Université de Picardie Jules Verne, France) – Obscur éclat de la notion d’identité, Billy CLARK (Middlesex University, London, UK) – Implicature, influence and intertextuality, and Bálint Péter FURKÓ (Károli Gáspár University, Hungary) – From Mediatized Political Discourse to The Hobbit: The Role of Pragmatic Markers in the Construction of Dialogues. In their speeches, the plenary speakers started from the idea that identity has been investigated from different perspectives and there are therefore numerous ways of interpreting this concept, trying to give their own view on identity and to demonstrate the dialogic nature of the concept.

In the end of the workshop, the organizers invited participants at a round table in order to draw some conclusions after two days of intensive and thought-provoking discussions. The main conclusion was that humans are cultural and dialogic beings who are always in contact, creating and being influenced by an ever-changing environment. Since there are many selves, there will always be various identities, which are fluid, dynamic, changing at every moment.

R&D Centre for Fundamental and applied Linguistic
Dr. Răzvan Săftoiu

Sectoral Operational Programme “INCREASE OF ECONOMIC COMPETITIVENESS”, Priority Axis 2 RDI, NATIONAL PROGRAMME CAPACITIES, MODULE 1: LARGE INVESTMENTS PROJECTS

Editor / Project manager
Prof. dr. eng. Ion VISA
Tel. 0372 729698, Fax: 0268-410525, e-mail: visaion@unitbv.ro, http://www.unitbv.ro/icdt/Proiecte/PRO-DD.aspx

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