NATIONAL

Main Topic: Overview of the International Activities in 2012

New Partnerships



The AGH University of Science and Technology, (AGH UST) Cracow, Poland

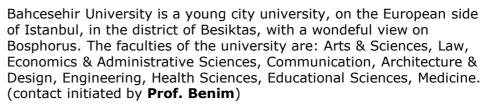
Memorandum of Understanding

The AGH University of Science and Technology in the historical city of Cracow, the former capital of Poland and seat of polish kings, being always faithful to its motto 'Labore creata, labori et scientiae servio', during 90 years of its existence has educated over 150,000 engineers with high professional qualifications.

(contact initiated by **Prof. Bongarz** and **Prof. Jahr**)



Erasmus Agreement





Technical University of Cluj Napoca, Romania

Erasmus Agreement

The history of technical higher education in Clui Napoca goes back to the beginning of the previous century, to the foundation of the Industrial College in 1920 in Cluj Napoca. Today, the Technical University of Cluj Napoca educates specialists in Mechanical, Electrical and Civil Engineering, as well as in Architecture. It has more than 12,000 students (contact initiated by **Prof. Niemann**)

Incoming Students (Teaching)

In SS 2012 three, and in Winter Semester 2012/2013 five students visited our department, from Turkey, from the Universities: Istanbul Technical University and Sakarya University.



Pinar Caglayan





Tunahan Günyeli



Oguz Ates



Incoming Students (Internship)

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Javier Llanos Lopes

During 2012, seven Students from Spain, (Polytechnic University of Valencia, University of Cartagena) and one student from Portugal (Polytechnic University of Lisbon) worked on different projects within the framework of different internship programs at the Institute FMDAuto of Beatriz Galindo Prof. Jahr.



Rodriguez



Jose Camacho Fliquette

Outgoing Students (Internship / Practical Experience)



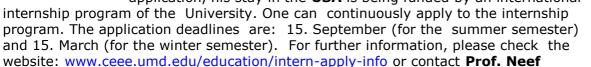
Till Biedermann

Internship (Praxisphase) in the Netherlands

Till Biedermann, Mechanical Engineering, Bachelor (Maschienenbau, PEU), succesfully completed his internship (Praxisphase) at the company océ in Venlo, **The Netherlands**, under the supervision of **Prof. Kameier**.

Practical Experience (Praxissemester) in the USA

Markus Reich, Mechanical Engineering, Bachelor (Maschinenbau, PEU), started his practical semester (Praxissemester) at the University of Maryland, near Washington D.C. in the USA. Upon his successful application, his stay in the **USA** is being funded by an international





Markus Reich

Teaching Staff Mobility



In November 2012 Britta Zupfer visited the "Universidad Politecnica de Valencia", **Spain** for one week, within the Erasmus Teaching Mobility. Invited by Dr. Lola Forés she taught German to students of engineering. Ms. Zupfer is impressed: "The university is modern and very well equipped for language learning. The Spanish students were really enthusiastic – especially since a quite a few of them would like to visit Germany as an exchange student. Several Spanish students are keen on finding work in Germany after their graduation in Valencia. It is definitely worth visiting this university - not just because the beach is within an easy reach! Exchange students will most certainly also enjoy the relaxed atmosphere on campus (the photo left)".

International Research



Dr. Irina Mitina

Irina Mitina from Moscow, Russia started to work (funded by DAAD) in the research group E^2 of Prof. Adam. Dr. Mitina is specialized on renewable energies, especially on the solar energy, as revealed by her pertinent background: She graduated from the Moscow State University as Environmental Engineer with emphasis on renewable energies. Following a post-

graduate research on solar thermal collectors under the supervision of Prof. Dr. Dmitriy Strebkov, she got her Ph.D. in 2009. She took part in numerous internships and courses on the solar and renewable energies in Italy, Germany and India. Currently, she is working in the "PVT-Norm Project" of Prof. Adam.

Mr. Sohail Iqbal, M. Sc. Chakwal, Pakistan from started to work as scientidic employee in CFD **Lab** of **Prof. Benim** in 2012. Mr. Iqbal is speicalized in computational methods in fluid and solid mechanics as well as programming. Mr. Iqbal obtained his B.Sc. degree Mechanical in Engineering at the University of Engineering and Technology Taxila, Pakistan.



Sohail Igbal, M.Sc.

Thereafter, he came to Germany and attended the Master Course Program "Computational Engineering" of Ruhr University Bochum for obtaining his M.Sc. degree. Currently he is computationally investigating flows in gas turbine combustors within the framework of a "Ziel2" research project of Prof. Benim



Emission measurements at ELGIN Gas Platform

Prof. Weber started a research project in cooperation with NASA. It is about performing research flights for investigating the emissions from the Turrialba volcano in Costa Rica, for the NASA calibrating satellites. Further international research projects are: Investigation of the transport of airborn pollutants across the border from **Poland** and the **Czech Republic** in cooperation with the "Landesumweltamt Sachsen"; Projects with the **University of Geneva** and the Norwegian Institute of Air Research, **Oslo**; Measuring flights for determining the



Prof. Weber on TV (Researchers Night) La Palma

methane emissions from the damaged offshore gas platform ELGIN in the North See in spring 2012; Official stand-by duty for measuring flights for the British Civil Aviation Authority and the British Government during the Olympic Games 2012 in London. Prof. Weber and his research group (Labor für Umweltmesstechnik) were attending and holding presentations at many international conferences at different places of the world including Vienna (Austria), Reykjavik, Selfoss (Iceland), Miskolic (Poland), El Hierro, Granada (Spain), Geneva (Switzerland), Manchester, Edinburgh (UK). Prof Weber also held presentations on volcano research flights at the University of Cambridge (UK) and Harvard University (USA).

Prof. Jahr continued his research project on the "Prediction of Leakages in Compensators" in cooperation with an company in **St. Petersburg, Russia**. A **Spanish** guest researcher was working, first, within the framework of an internship, and then as a scientific employee in a research project of Prof. Jahr. A large number of incoming students (**Spain**) worked at the Institute **FMDAuto** of Prof.Jahr in 2012.

Prof. Niemann was accepted as a member of the "**International Network** of Laboratories Design, Manufacturing and Innovation", a cooperative platform for initiating and performing of **EU projects**. He was partner in the EU proposal "Cooperative Design and Operation of a Passive House".



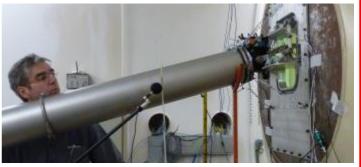
Prof. Köppke giving his talk at the OECD workshop

Between 23-25 May 2012, **Prof. Köppke** attended an international workshop organized by several parties (OECD Arbeitsgruppe für Chemieunfälle, Umweltbundesamt, Freistaat Sachsen), industrial accidents caused by natural hazards such as flood, storm, eartquake (examples: Tsunami, Japan, Hurricane Sandy USA, 2012). The main question was, if such natural catastrophes increase as a result of the climate change and how the industrial plants can be protected better. The working paper as an introduction into the subject, was prepared by Prof. Köppke. At the end of the workshop, a document about the conclusions and recommendations of the OECD Workshop Natech Risk Management was approved.



Prof. Benim spent a sabbatical semester (SS 2012) (Forschungssemester) at the **Faculty of Aeronautics and Astronautics** of the **Istanbul Technical University** (ITU) in **Turkey**. His research in cooperation with the colleagues from ITU was focused on combustion modeling in gas turbine combustors. Additional topics such as external aircraft aerodynamics, aeroelasticity and development of a Lattice Boltzman Method (LBM) based flow solver were further research areas. At the same time, Prof. Benim was cooperating with the researchers from the **Bahcesehir University** (BAU), Istanbul, in the area of biofluid dynamics and biomedical engineering.

The research group "Fluid Engineering and Acoustics" of **Prof. Kameier** joined two field campaigns in **Toulouse** (**France**). In March, measurements was performed at the outflow valve of the Boeing 787-9. In an international team of French, American and German engineers from five companies and research institutions, work was performed on the altitude test rig of the French aviation research organization DRA in Balma. The optimization for noise reduction was completed within 10 days. Prior to the tests, flow simulations were



performed by the group of Prof. Kameier. Since they were successful, the working atmosphere during the measurements in December 2012 was relaxed. Thus, Tolouse in late autumn with culture, sports (rugby), Airbus Visitors Site, French live music and party could be enjoyed until the morning hours.

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- A. M. Maqableh, S. A. Ammourah, A. F. Khadrawi, M. A. Al Nimr and A. C. Benim, "Hydrodynamics Behaviour of Fluid Flow in Micro-Venturi", Canadian Journal of Physics 90 (2012) 83-89.
- E. Aslan, A. Nahavandi, I. Taymaz and A. C. Benim, "A Comparison of Different Approaches in Modelling Non-Rectangular Boundaries by the Lattice Boltzmann Method", Progress in Computational Fluid Dynamics 12 (2012) 433-438.
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- K. Weber, R. Reichardt, A. Vogel, C. Fischer, H. M. Moser and J. Eliasson, "Computational Visualization of Volcanic Ash Plume Concentrations Measured by Light Aircrafts over Germany and Iceland during the Recent Eruptions of the Volcanoes Eyjafjallajökull and Grimsvötn, in: Recent Advances in Fluid Mechanics, Heat & Mass Transfer, Biology and Ecology, ISBN: 978-1-61804-065-7, Harvard, Cambridge, 2012, 236-240.
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- J. Niemann, Workshop participation at the "14th International Conference on Modern Information Technology in the Innovation Process of Indusrial Enterprises", October 24-26, 2012, Budapest, Hungary.
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EDITORIAL STAFF

This is an overview, which is not claimed to be exhaustive. Some activities have been omitted due to space limitations. We apologize, in advance, for any activity that might have unintentionally be omitted due to an oversight.

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