

Overview of the International Activities in 2016

International Master Degree Programs

In Summer Semester 2016, our department (Department of Mechanical and Process Engineering, Düsseldorf University of Applied Sciences) has launched **two new master degree programs** with an explicit **international orientation: Mechanical Engineering (ME)** and **"Internationales Wirtschaftsingenieurwesen (IWI)"**. In **ME**, the language of instruction is **purely English**. Thus, the ME program offers an attractive alternative to the graduates from foreign countries to continue their education in Germany. At the same time, it offers German students a good opportunity to solidify their language skills, and improve their international experience in close contact with their fellow students from different countries (**internationalisation@home**). IWI is bilingual, i.e. both knowledge in English and German languages is required. In the third master degree program of the department, i.e. **"Simulation und Experimentiertechnik"**, some of the courses are taught in English. In all three master degree programs, the standard period of study is three semesters and the degree to be awarded is **Master of Science (M.Sc.)**.



*Prof. Benim with students of the Master Degree Program **Mechanical Engineering**, after a practical training session within the framework of the course „Computational Fluid Dynamics“.*



Prof. Neef, Prof. Zielke, Prof. Niemann, Dipl. Kff. Fussenecker and B.Eng. Schlösser together with the Master Students, who present their work within the course „Engineering Conferences“

Student Mobility

Through the European **Erasmus** program, we hosted fourteen incomings in the Summer Semester 2016 (**France, Turkey**) and fifteen incomings in the Winter Semester 2016/2017 (**Greece, Poland, Turkey**).

Through the **IGCHE Program**, four students from **PSG Institute of Advance Studies, Coimbatore, India**, enrolled in our study program "Product Development and Production", in order to complete their Bachelor studies and earn the degree of B.Eng.

Six students from **India**, one student from **Pakistan** and one student from **Tunisia** enrolled in our master degree program **Mechanical Engineering**, who are still continuing their studies in the third semester.



*Fatma Nilay Yildirim
TU Istanbul*

Staff Mobility

In November 2016 **Britta Zupfer** visited the **Technological Educational Institute of Heraklion (T.E.I. of Crete), Greece**. Invited by Dr. Gareth Owens and Dr. Constantin Condaxakis she presented our department to students and professors of the TEI of Crete Engineering School (picture right: staff members)– focusing on a constructive collaboration between the researchers and students of both universities.



Staff Members, T. E. I. Crete, Greece



Dr. Schramm with Staff Members (MARUCO, Tansania)

Dr. Schramm, an assistant of **Prof. Adam**, spent two weeks in **Tansania** at the **Marian University College (MARUCO)** within the framework of a three-year research project "Energiewende macht Schule" of the "DBU Deutsche Bundeststiftung Umwelt".

Again from the research group of **Prof. Adam**, **B.Eng. Ille**, and **Ms. Bruns** and **Ms. Paas** visited a university in **Madagascar**. In return, a representative of the madagascan university visited the facilities of Prof. Adam (E²).

In April 2016, **Prof. Benim**, **Prof. Jahr** and **M.Sc. Mrosek** welcomed **Prof. Hadeb** from the **University Oum El Bouaghi, Algeria** who visited our department with a group of students, within the framework of a DAAD program. **Prof. Benim** visited our **IGCHE-Partner Veltech University, Chennai, India** as "Visiting Faculty" for two weeks in August 2016 to teach "Fluid Mechanics Fundamentals".



Prof. Benim with Prof. Hadeb and Algerian students



Prof. Benim with Prof. Iqbal and Indian students

International Conference Visits

Prof. Niemann , **Dipl. Kff. Fussenecker** and **B.Eng. Schlösser** visited the "International Conference on Compative Manufacturing (COMA)" in Stellebosch, **South Africa** in January 2016, and the "4th International Conference on Quality and Innovation in Engineering & Management" in Cluj/Napoca, **Romania** in July 2016. The students **Ms. Dehmer** and **Mr. Reich** were also joining the trip to Romania. The conference visits were combined with visits to our partner universities in the countries.

Prof. Adam and **Mr. Schramm** visited the „12. International Conference on Solar Heating and Cooling" in Gleisdorf, **Austria**, in June 2016. **Prof. Weber** was Chairman at the European Optical Society Meeting (EOSAM) in Berlin, in September 2016.

Prof. Benim visited the "Ninth International Conference on Computational Heat and Mass Transfer (ICCHMT 2016)" in **Cracow**, Poland. He was the **European Chair** of the conference.



Prof. Niemann with students and Romanian Colleagues at the conference, Cluj/Napoca, Romania



Prof. Benim with colleagues at ICCHMT 2016, Cracow, Poland

International Research



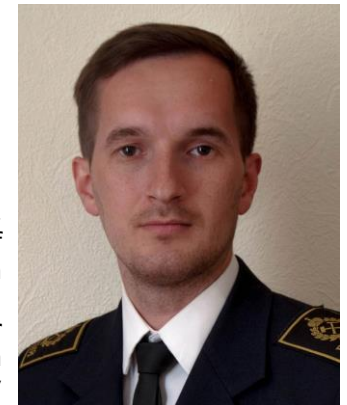
Prof. Jahr

As in the previous years, **Prof. Jahr** hosted also in 2016 a number of international the students and researchers within the framework of his research projects at FMDAuto – Institute für Produktentwicklung und Innovation (Insitute of Product Development and Innovation).

One of the guest researchers at the institute was **Prof. Dr. Alexey Fomin** from the Institute of Mechanical Engineering and Transport, Department of Theory and Bases of Design Principles of Machines, Siberian State Industrial University, Novokuznetsk, **Russian Federation**. He worked as scientific collaborator under the guidance of Prof. Jahr during the period from October 2015 to March 2016. He worked on the topic „Development and Designing Kinematic Schemes of the Spatial Mechanisms with Imposed Constraints“ and made in this area several publications on national and international platforms. Prof. Fomin’s research was funded by a DAAD scholarship for Post-Docs. This was his second research stay at FMDAuto. Currently, Prof. Fomin is working on further research projects at the Swiss elite university École polytechnique fédérale de Lausanne (EPFL).



Prof. Dr. Alexey Fomin



Dr. Stanislav Chupin

A further post-doc guest researcher hosted by **Prof. Jahr** has been **Dr. Stanislav Chupin**, scientific assistant at the Department of Descriptive Geometry and Engineering Graphics of the National University of Mineral Sources „University of Mines“, Saint Petersburg, **Russian Federation**. His stay in Germany was funded by the DAAD fellowship Mikhail-Lomonosov. His research subject was „Research of Modern Methods of Increasing the Strength and Wear Resistance of Machine Components in Mining and Oil Industries“. His stay took place for a period of six months from October 2016 and March 2017. His research was technically supported also by **Prof. Heckmann** and **Prof. Bongartz** from FMDAuto.

Prof. Weber established a cooperation with the Delft University of Technology, **The Netherlands**, concerning the prediction of volcanic ash clouds based on aircraft measurements. **Prof. Weber’s** cooperation on volcano research with the **University of Iceland**, **University of Kyoto**, and **the ITER Institute of Canary Island** continued. **Prof. Weber** and his team (Laboratory of Environmental Measurement Techniques) continued the aircraft and car based measurements of industrial emissions of air pollutants in **Czech Republic** and **Poland**.

The cooperation of Prof. Weber with the **Jet Propulsion Laboratory** of **NASA** continued. An international measurement campaign with manned and unmanned aircraft is planned at a polluted lake in **California, USA**.

Prof. Weber and international colleagues were successful in placing another publication in the famous “**Nature**”.



*During aircraft measurements (**Prof. Weber**) at a power plant in **Czech Republic***

This publication reported about flight testing of airborne innovative IR-instrumentation for volcanic ash within an artificial ash plume above the Atlantic Sea. This flight test was one of the biggest experiments in flight history, comprising an A400, an A340, a Caravelle aircraft and the aircraft of Düsseldorf University of Applied Sciences (Hochschule Düsseldorf, HSD) for airborne measurements.

Prof. Weber was reviewer for several international journals .



*Pilot U. Post, **Prof. Weber**, A. Vogel in front of measurement aircraft*

Prof. Ziegler has been co-supervising the PhD thesis of a graduate of the University of Cairo, **Egypt** in the area of photovoltaics in cooperation with Prof. Breaban of the Artois University, Béthune, **France**.

Prof. Benim was editor and reviewer for a number of international journals (including Progress in Computational Fluid Dynamics, PCFD) and conferences (Including ASME Turbo Expo, 2016, Seoul. Korea).

Publications in International Conferences and Journals

- Schramm, S., **Adam, M.**, „Speichereinbindung mit dynamischem Beladebereich im Vergleich zu anderen Speicherladekonzepten“, 12. Internationale Konferenz für solares Heizen und Kühlen, Konferenzband S.433-441, Gleisdorf SOLAR 2016, Gleisdorf (Austria), 08.-10.06.2016.
- Krausmann, E., **Köppke, K.-E.**, Fendler, R., Cruz, A. M. Girgin, S., “Qualitative and Semiquantitative Methods for Natech Risk Management Assessment”, In: Natech Risk Assessment and Management - Reducing the Risk of Natural-Hazard Impact on Hazardous Installations -, Eds: Krausmann, E., Cruz, A., Salzano, E., Elsevier 2017, ISBN: 978-0-12-803807-9.
- Niemann, J.**, Dehmer, J., “A business tool to measure industrial service performance – the total care index”, in: 2016 International Conference on Production Research – Africa, Europe, Middle East 4th International Conference on Quality and Innovation in Engineering and Management, July 25-30, 2016, Cluj-Napoca, Romania.
- Niemann, J.**, Benedikt, R., Stöhr, C., Adrian, P., “Process analysis for a Romanian automotive manufacturer”, in: 2016 International Conference on Production Research – Africa, Europe, Middle East 4th International Conference on Quality and Innovation in Engineering and Management, July 25-30, 2016, Cluj-Napoca, Romania.
- Niemann, J.**, Monika, J., “Development of modern lecture materials for the subject of product life cycle & service management”, in: 2016 International Conference on Production Research – Africa, Europe, Middle East 4th International Conference on Quality and Innovation in Engineering and Management, July 25-30, 2016, Cluj-Napoca, Romania.
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- Niemann, J.**, Fussenecker, C., Schlösser, M., Turek, S.Miloloza, D., “Development of a strategic B2B marketing strategy for a dry port in Jakarta/ Indonesia as an integral part to solve local logistic bottlenecks”, in: International Conference on Competitive Manufacturing (COMA’16), Stellenbosch, South Africa, 27.-29. January, 2016.
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- Weber, K.**, Fischer, C., Lange, M., Frühsorger, A., Roßkopf, C., Pesch, M., Ziegler, V., Bestimmung der Filtereffizienz von High Volume Air Condition(HVAC)-Systemen von verschiedenen Pkw mit realen Feinstaubbelastungen in Peking, Gefahrstoffe – Reinhaltung der Luft, Springer-VDI-Verlag, 76, Nr. 11/12, pp. 437-414, 2016.
- Eliasson, J., **Weber, K.**, Vogel, A., Pálsson, T., Yoshitani, J., Miki, D., Investigation and Separation of Turbulent Fluctuations in Airborne Measurements of Volcanic Ash with Optical Particle Counters, Journal of Disaster Research, Vol. 11., No.1, pp72-84, 2016.
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- Benim, A.C.** “Development of a System for Thermoelectric Heat Recovery form Stationary Industrial Processes”, Invited Lecture, Symposium on Advances in Thermofluids Sciences”, 29 September 2016, Howrah, India, Extended Abstracts.
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- Iqbal, S., **Benim, A. C.**, Fischer, S., Joos, F., Kluss, D., Wiedermann, A., "Experimental and Numerical Investigation of Natural-, Bio- and Syngas Flames in a Gas Turbine Combustor", Proc. 9th Int. Conference in Computational Heat and Mass Transfer (ICCHMT 2016) May 23-26, 2016, Cracow, Poland (2016) Paper No. 211.
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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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