From March 24 to March 27 2009, the Chair organized an Alumni Workshop in Ghana, at Kwame Nkrumah University of Technology in Kumasi, Ghana on the sustainable management and exploitation of Africa’s resources and environment. This theme is of great relevance for Ghana, a country well endowed with natural resources and active on mineral resources extraction at large and small scale. Prior to the Conference, on 23 March, a short course on Environmental/Safety Management Systems was offered to students of KNUST. The workshop was attended by the Second Ambassador of Germany to Ghana, the Representative of the Ghana DAAD Office, Representatives of Top Management of KNUST, many Alumni of German Universities and many students of the TU Bergakademie Freiberg. The workshop was an excellent platform for exchange of knowledge and expertise. The presentations are available on the IMRE Website at: http://www.wiwi.tu-freiberg.de/~urm/imre/DisplayContents.php?ContentId=rXdl

On April 30 2009 the BMBF project DIMO (Thin film deposition in micro-columns for coating surfaces) initiated in 2008 in cooperation with the Institutes for Applied Chemistry and Physics from TU Bergakademie Freiberg came to an end. Basis for the joint project in Phase I was the patent "Silanthermolyse in microstructured apparatus" (Bertau, Patzold, Singliar: 2007). The patent describes a process of silane thermolysis in micro-columns for the production of silicon layers via vapor deposition, as a method for coating suitable substrate materials for several applications. In Phase I the project aimed to explore the needs of potential customers and to identify which of the three application options: A= Photovoltaic systems; B= Mechanical components in pump technologies or C= containers for food conservation offers the best conditions for market entry. URM conducted the “Market-Potential Screening” using the “Quality Function Deployment” (QFD), a tool which made possible the study of customer needs according to feasible technical solutions. The study was conducted in four consecutive steps. The first step consisted on a survey to several companies (solar, food, and building material sectors as well as pumping equipment manufacturers) via telephone interviews for the purpose of identifying which application option offers the greatest potential to be further developed in the market. The results revealed that A was the application option with the highest degree of innovation. The second step consisted on the study of customer needs in relation to technical specifications using the House of Quality supported by a questionnaire administered to end-users. The results of the House of Quality provided information on which technical specifications should be further considered for research and development and which should be neglected to meet the needs of potential end-users. The third step dealt with the cost analysis for option A. The aim of this step was to determine which competitors operate with which technology in the market. This step consisted of a market research, market potential and risk analysis. The fourth step consisted on recommendations for further research and development based on the results of the House of Quality. Recommendations included research on the development of silicon roof tiles through the thin film deposition process and the substrate materials for PV-modules including ceramics, glass, metal, plastics, etc. The results of the Market-Potential Screening suggested the manufacture of active roof tiles through the process of thin-film deposition as an application with large market potential for further inspection at the innovation laboratory.
From April 29 to April 30 the 3rd International Seminar on Society and Materials, organized in cooperation with Arcelor Mittal, took place. This event formed part of a series of seminars under the initiative of the SOVAMAT - SOcial Value of MAterials- Group in Freiberg. SOVAMAT was launched some years ago by ArcelorMittal and represents a consortium of material industries and international and multi-disciplinary scientific teams. The material industries represented are ferrous and non-ferrous metals (Steel, Zinc, ...), wood, paper, cardboard, plastics and composites etc. Experts from several countries including France, Austria, Japan, Germany and Canada gave presentations about various issues on Life Cycle Analysis of materials, Ecodesign, Material Flow Accounting, Substance Flow Analysis, Recycling and Corporate Social Responsibility.

On May 28, Prof. Bongaerts took part in the Seminar “Materials Efficiency and Resource Conservation in Riesa”. The seminar’s theme was on Industrial Networking for Materials Efficiency and Resource Conservation and emphasized Good Practice examples. This event paved the way for the development of a new project STAHLSAXMATEFF which has the aim of increasing the resource efficiency in a network of about 6 steel companies from Saxony. The first Phase consists on identifying key project areas to be investigated in the context of material efficiency. The preliminary discussions with a group of companies from the region have started in September 2009.

In co-operation with “sept”, the Study Programme on small scale enterprise of the University of Leipzig, IMRE Students organized a one day workshop on sustainable development and SMEs. This took place on 20 June in Leipzig. The presentations are available on the IMRE Website: http://www.wiwi.tu-freiberg.de/~urm/imre/DisplayContents.php?ContentId=rlCv

Our cooperation with the World Steel Association continued despite the economic downturn and the severe implications it has had in industry. For the second time worldsteel commissioned our team to undertake a survey to several stakeholder groups of the steel industry. The project started on 1 April and finalized on 30 September 2009 with the presentation of results at the 10th Sustainability Forum of worldsteel in Brussels, Belgium. The project involved the setting up of a network of 12 partners on a global basis. The aim of the project was to investigate the needs, interests and concerns from 8 different stakeholder groups in 12 countries to improve the sustainability reporting and management efforts of the steel industry. The feedback was collected through the administration of a questionnaire translated into 5 different languages via telephone interviews to more than 900 stakeholders of the steel industry. The results of the survey will be used by worldsteel and its member companies in their forthcoming sustainability reports this year. In the same context, and after the conclusion of the 2009 stakeholder survey, which had international reach, our Chair was commissioned to undertake another small project for Australia. The survey project finalized on 30 November, 2009 and the results will be released this month of January by Onesteel at the Australian Steel institute – ASI’s Strategy day.

From 20 September to 29 September, IMRE took part in a Workshop on Small Scale Mining in Ghana, organized by Geokompetenzzentrum e.V., currently the largest European Network of companies working in the fields of geosciences, exploration, mining, mining recultivation and related business areas. The workshop took place mainly due to the long standing intensive contacts of IMRE to Ghana authorities and institutions – and Ghana IMRE Alumni. The workshop gathered a diverse group of participants from industry, government, public and the education sectors which definitely added value to the discussions and broadened potential areas of cooperation between Germany and Ghana.
At the end of September, Prof. Bongaerts participated in an Azerbaijian – German Conference on Higher Education with an Educational Student Fair in Baku. On October 30, we had the traditional opening Ceremony for IMRE 2009, one of the largest intakes ever in the IMRE Programme. This day a new issue of the IMRE Journal was released.

At the special request of DAAD, on 5 and 6 November, IMRE organized a workshop in Accra for Alumni of German Universities on the occasion of the launching of the German ALUMNI Portal of DAAD. This workshop was dealing with Oil finds in Ghana and the economic and social consequences. Papers were given by various scholars and by representatives of industry about the future development of this new industry. Several papers were also given by IMRE ALUMNI. On the same occasion, a visit at KNUST took place and several meetings with top management of the university and with the School of Business were arranged. It is the intention of both parties, KNUST and TU Bergakademie, to start up the IMRE Programme in the first term of 2010 at Kumasi.

A highlight of 2009 was the PhD meeting which took place on November 27, all Phd Candidates of the Chair met in Freiberg to propose and discuss the currents status of their work, the meeting was a good opportunity for exchange of views and networking.

In regards to IMRE teaching and related activities, in June 2009, four IMRE Freiberg left for Bangkok to spend a term at the KMITL IMRE Thailand Programme. In July, Prof. Bongaerts and Jianxu Liu went down for two weeks to Bangkok to do some teaching. Six IMRE students from the KMITL Sister Programme (IMRE Thailand) spent the winter Term 2008- 2009 in Freiberg. Everybody agrees that this was a very interesting and fruitful experience.

As in several occasions in the past, on 27 April 2009 the excursion to DREWAG took place. IMRE 2008 visited the gas turbines and heat plants located at Nossener Brücke. DREWAG, Dresden’s energy and water supplier, welcomes our students year to year, practically since the birth of the IMRE Programme.

On 16 June, as part of the teaching activities for the lecture Sustainability and Environmental Management and Policy - SEM, the excursion to Usti nad Labem in the Czech Republic took place. Our host Prof. Josef Sejak from the Jan Evangelista Purkyne University, Faculty of Environment (FOE), and two other colleagues of him organized an extraordinary tour around the Krusne Hory mountains. Karen Murillo and IMRE 2008 students travelled to several nature protected areas, restoration sites and mining sites. Students also learned about projects in cooperation with the Ministries for Education and Environment.
Publications in journals or book chapters


Bongaerts J.C. Chemikaliensicherheit - das REACH-Programm, in: Jahrbuch Ökologie 2009 - Lob der Vielfalt - Gerd Michelsen et al. (Hrsg.) Hirzel, Stuttgart, 2008 Buch


Tsai H (2009) ‘Back to the tap’: A global battle against bottled water industry by Huiju Tsai, The IMRE Journal 3: 1-21

PhD thesis

Yupari A (2009) Economic liberalisation, sustainable development, and mining policy: the Peruvian case

Other publications (not necessarily refereed)

Murillo K (2009) Stakeholder Survey to Improve Steel Industry Sustainability Reporting, World Steel Association, 10th Sustainability Forum, Brussels, Belgium


Master and diploma theses

Ajay R (2009) Sustainability assessment of CDM projects using multi-criteria analysis: simplifying the MATA-CDM


Böhme C (2009) Einfluss verbesserter Bohrwerkzeuge auf die Wirtschaftlichkeit von Tiefen-Geothermieprojekten
Mann C (2009) Potentiale erneuerbarer Energien zur Stromerzeugung in Sachsen

Mosqueda A and Haensel P (2009) Perspectives of the implementation of renewable energies: a comparative view of Germany and Mexico


Seminar papers


Madea C (2009) The future of CO₂-based taxation for passenger cars in Germany – an adequate measure to reduce the emissions of passenger cars to 120 g CO₂/km until 2012 which has been set by the European Commission?