



INTERNATIONALIZATION – BRAZIL AND CHINA IN FOCUS

The Fraunhofer-Gesellschaft strongly expanded its international activities over recent years. Fraunhofer IFAM follows the same direction, aiming to increase international cooperation with excellent research partners based abroad. The contacts and cooperation are increasing also to outside Europe: in 2012 significant progress was performed in collaboration with Chinese and in particular with Brazilian partners.

Closer collaboration with Brazil

A considerable step for closer contact with universities and industrial partners in Brazil came from research-oriented political decision-making bodies in Germany and Brazil. This manifested itself in 2010/11 in the German-Brazilian Year of Science, Technology, and Innovation (DBWTI). Since then researchers at Fraunhofer IFAM have been setting up network structures and cooperating in joint projects.

The network and activities are based on three main pillars: university education and research, applied research, and industrial applications. International visibility on both sides of the Atlantic is a prerequisite for acquiring future partners and becoming familiar with regulatory frameworks for collaboration. Intense collaboration with Brazilian universities, their staff and especially their students provided a strong and successful platform for scientific research cooperation, in particular due to the focus of Fraunhofer institutes on applied research.

Also attractive for industrial research partners in Brazil is the high quality of German R&D. A highlight was the invitation of Fraunhofer IFAM researchers and Brazilian students un-

dertaking practical training at Fraunhofer IFAM to a meeting with the Brazilian President, Dilma Rousseff, and the Brazilian Minister for Research, Technology, and Innovation, Dr. Marco Antonio Raupp. At the meeting in March 2012 in Hannover, the conception and first experiences implementing the Brazilian initiative “Science without borders” (CsF - Ciência Sem Fronteiras) and the setting up of the Brazilian Research and Industrial Innovation Company (Embrapii: Empresa Brasileira de Pesquisa e Inovação Industrial) and its collaboration with the Fraunhofer-Gesellschaft were discussed in detail.

Eight Brazilian CsF fellowship holders, who undertook one year of internship at Fraunhofer IFAM in 2012 under this CsF initiative, together with bilateral exchange students from the Federal University of Santa Catarina (UFSC) currently represent the largest group of international students working at Fraunhofer IFAM. The visit of the President of the Brazilian Association of Rectors of State and Municipal Universities (ABRUEM) and rector of the University of Ponta Grossa (UEPG), Prof. João Carlos Gomes, to Fraunhofer IFAM in June 2012 emphasized the importance of this collaboration from the Brazilian side.

The German Academic Exchange Service (DAAD) provides further opportunities for international collaboration. Following



a successful application for funding, the DAAD supported a summer school organized in September/ October 2012 in Florianópolis by TU Dresden (Dr. Jan-Ole Joswig) and Fraunhofer IFAM (Dr. Welch Leite Cavalcanti) entitled “Nanotechnology for the design of functional materials: theory, experiment, and developments”. Selected Brazilian master and PhD students from throughout the country keenly learned about current and future research work via activities and lectures performed by the organizers Dr. Jan-Ole Joswig and Dr. Welch Leite Cavalcanti, and by Prof. Dr. Florian Müller-Plathe (TU Darmstadt), Prof. Dr. Michael Springborg (University of Saarland), Dr. Michael Noeske and Dr. Klaus Rischka (both Fraunhofer IFAM), and the hosts at Federal University of Santa Catarina (UFSC) Prof. Dr. André Avelino Pasa, Prof. Dr. Mauricio Girardi, and Prof. Dr. Aloisio Nelmo Klein.

The main areas of research at Fraunhofer IFAM were presented in a plenary lecture by Prof. Dr. Bernd Mayer in Florianópolis on the occasion of the annual meeting of the Brazilian Materials Research Society (SBPMat) in September 2012. Within the SBPMat 2012 a new symposium entitled “Joining Technology – Adhesion in Research and Development” was organized by Dr. Welch Leite Cavalcanti of Fraunhofer IFAM and SBPMat local organizers. The symposium enabled the research results of the Brazilian students working at Fraunhofer IFAM to be presented. In addition, there was the opportunity to strengthen the cooperation with the President of the Brazilian Society for Adhesives and Adhesion (ABAA), Prof. Dr. Silvio Barros, to couple the symposium topics to the first Brazilian-Portuguese conference on adhesives and adhesion taking place in Rio de Janeiro in November 2012. The Brazilian students working at Fraunhofer IFAM were also able to present research work within this ABAA conference.

Electromobility driving the collaboration with China

In July 2011, an agreement was made between the Federal Ministry of Transport, Building and Urban Development (BM-VBS) in Germany and the Ministry of Science and Technology (MOST) in China on closer collaboration in the area of alternative drive systems and electromobility. This collaboration in particular involves wide-ranging exchange between six German and Chinese model cities or regions.

One of the selected partnerships is between Bremen/Oldenburg in Germany and Dalian in North China, which will extend the existing twinning of the cities of Bremen and Dalian that has existed since 1985. In April 2012, a delegation of 23 people from Dalian, led by Liu Yan, Assistant Mayor and Director of Dalian Economic and Information Technology Committee, visited Bremen for the first exchange on the subject of electromobility. The return visit was in May 2012 when federal councillor Heiner Heseler went to Dalian with a delegation from Bremen.

Further German-Chinese workshops are currently being planned. They will address the topics of urban development and electromobility using the example of gated areas (e.g. Überseestadt Bremen), port logistics, battery/electric buses in the public transport network, taxis based on electric vehicles and hybrids, and the charging infrastructure.

- 1 Prof. Dr. João Carlos Gomes, with Brazilian students working under the Brazilian study program “Science without frontiers” and Fraunhofer IFAM researchers, during his visit to Bremen.
- 2 Visit of the delegation from Dalian (China) to Fraunhofer IFAM in Bremen.

Besides collaboration between the model regions, there are worthwhile opportunities for training in the area of electromobility. In 2012, Fraunhofer IFAM, working with a German vehicle manufacturer, started developing suitable training courses for China. Important contacts for this have been established with research organizations (universities and institutes), in particular in Shanghai.

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