

Q&A: RODRIGO MARTINS

Europe welcomes Brazilian spirit

Rodrigo Martins, 2013 president of the European MRS, says that strong links between Brazil and Europe will yield better materials for a better life

As a Portuguese scientist at the New University of Lisbon, what connections do you have with the materials research community in Brazil?

In 1981 I went to the University of São Paulo (USP) in São Carlos to start some research activities in amorphous silicon, and I also started a course on disordered semiconductors. During that time I was proud to build the first facility in USP for processing amorphous silicon, and I saw then how Brazilians react to a new idea. They had so much enthusiasm that within six months we were able to design, build and test the complete system – and it is still working 30 years later.

From then until 1993, I typically spent between three and six months in Brazil, so I have a good idea of how the Brazilian community has built up its knowledge and capabilities within my field of electronic materials. What has been achieved in São Carlos is particularly impressive, since they started with open fields and now have one of the best research institutes in Brazil.

How have your collaborations developed in more recent years?

Over time we have developed many joint research programmes in areas such as photovoltaics and electronic materials, some of which have been supported by European projects as well as Brazilian funding agencies. One major success has been a partnership with Roberto Faria's group in São Carlos to develop a “sandwich” PhD programme, where students from Brazil and Portugal share the research infrastructure and receive a degree from both USP and the New University of Lisbon.

It's a fantastic approach because the students can learn about inorganic electronics in my lab, and then acquire skills and knowledge in organic semiconductors in São Carlos. Students who have finished this programme are now working for Cambridge Display Technology, a UK company developing organic devices for consumer applications.

How is the E-MRS developing links with the Brazilian MRS?

We are keen to establish joint development activities in three main areas where Brazil has particular strengths: materials for energy, materials for health, and multiscale modelling. At this year's meeting of the E-MRS, representatives from the Brazilian MRS met with European stakeholders from ERAnet – the organization that co-ordinates research activities across

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Europe – to discuss how we can build up joint research programmes in these areas.

The energy sector offers a clear opportunity for collaboration, since we know that Brazil is a pioneer in biodiesel production and also has the potential to become a world leader in the development of materials for energy. We have already worked with the Brazilian MRS to present some of the latest scientific knowledge at the Rio+20 conference on sustainable development, organized by the United Nations in 2012, and we now have the support of both ERAnet and the European Commission to develop bilateral projects in this critical area.

What can Europe learn from the materials research community in Brazil?

One key strength, and one that I think we should copy in Europe, is the focus in Brazil on understanding the entire value chain, all the way from the initial idea to building a practical system. Brazilian scientists develop expertise not just in the synthesis and characterization of materials, but also in fabrication processes and product manufacture. From this point of view the Brazilian scientific community is making great strides towards integrating research and market needs.

In terms of technology, I believe that Brazil has all the tools and resources that it needs to lead global efforts to develop materials for the energy sector. Materials for health is another key focus that will become more strategic in the coming years, while Brazil has a very good theoretical community that provides the modelling skills needed to support key developments in materials science. This is what you need: people who think, people who make things, and people who find new ways to use technology.