

Dr. Dariusz

Burnat

Graduated in materials engineering from the State Higher Vocational School in Tarnow (2002-2006), and from the Faculty of Materials Engineering and Ceramics, AGH University of Science and Technology in Krakow. Graduated with honours in 2008 and commenced doctoral studies at AGH. He has continued research within SCIEX at the Empa institute, completed doctoral studies with honours earning a doctoral degree in April 2012.

DURATION OF THE SCIEX PROJECT:
1.11.2009 – 30.04.2011

PROJECT:
NANO-SOFC
– Preparation and
Characterization
of Nanostructured,
Alternative Solid Oxide
Fuel Cell (SOFC) Anodes
with Focus on Carbon
Containing Fuels

AGH University
of Science and
Technology in
Krakow

PL

CH

Swiss Federal
Laboratoires for
Materials Science
and Technology



What was the objective of your project implemented as part of the SCIEX programme?

My ultimate goal was to complete a PhD programme abroad, by gathering material for my PhD thesis and writing it. I managed to do that. As to the objective of the project itself – I intended to develop anodes able to work properly in higher temperatures and which would be efficient for a longer period than those applied at present. I wanted to propose new materials to be used in fuel cells which would constitute a remedy to certain persistent problems (e.g. low electronic conductivity, poor resistance to oxidation).

What were the outcomes of the project?

We developed some materials that our industrial partner found interesting. As to me – having completed the project I immediately started a regular job as a postdoc at the Empa institute (*Swiss Federal Laboratories for Materials Science and Technology*), but research into that solution was continued as part of another SCIEX project and some smaller projects. I can safely say that I

started something that subsequently turned out to be useful and good enough to get industry interested.

I have published several articles in highly ranked scientific journals (e.g. *International Journal of Hydrogen Energy, Fuel Cells*) and given presentations at recognised scientific conferences in which I would not have participated if not for the SCIEX fellowship and my subsequent work.

What impact did the fellowship have on your professional and private life?

The decision to work abroad allowed me to intensify my academic development. As regards my domain, my Swiss job lets me show what I can do – much more can be done there – and done possibly better – than anywhere else. My professional life as it is at the moment is a direct consequence of the SCIEX fellowship, e.g. it was my subsequent job that found me and not the other way round and I would not have cooperated on the projects that I have implemented. SCIEX also helped me to develop a significant contact network which is very important in professional life.

On the private level: I can boast of having improved my knowledge of foreign languages. Apart from English I have also gained proficiency in German, which I use every day and at the moment I intend to master French, which I am currently studying. I have also acquired qualifications relating to project management, working in an international and multicultural environment, and better time management to name but a few.

If not for the fellowship...

...I would not have been where I am today. I would not have had that chance to develop and achieve so much over such a short period of time. That was a valuable experience.