

## The Young Scientist Award recognises energy researcher Yaroslav Filinchuk

Yaroslav Filinchuk is the new recipient of the 2010 ESRF Young Scientist Award for “his outstanding work on the chemistry of solid-state hydrides”. This Ukrainian chemist has worked at the Swiss–Norwegian beamline (BM1) at the ESRF since 2006. He is currently a visiting professor at the University of Aarhus (Denmark). At 31, he already has more than 100 peer-reviewed papers, mostly focusing on energy themes, such as hydrogen storage. His work coincides with the theme of this issue of *ESRFnews*, which can be found on pp12–13. *ESRFnews* finds out more about this researcher.

### What does this prize mean to you?

Mainly, it is having the research activity of my academic project publicly recognised. Reputation is difficult to build up – it’s not just about writing a large amount of papers for publication. I am very pleased that scientists from other areas recognise our work as an achievement in this rapidly developing field of research. It also gives me more confidence and helps me to move forward.

### Did you always want to do research on energy or did you get into it by chance?

For a long time my aim has been to do high-quality research in a rapidly evolving field. This is an understandable aspiration – that way one can learn quickly and collaborate or compete with other researchers, i.e. enjoy the science in all of its different forms. I was very fortunate to take part in some research on hydrides at the University of Geneva in 2001. Later, I changed the direction of my research towards materials that were more suitable for studies at the ESRF and which turned out to be the most promising for hydrogen-storage applications.

### How relevant do you think your research is today, or will it be more so in the future?

As I said above, the field is quickly emerging, and this often occurs in potential applications that have high expectations. Industry, mostly automotive companies, is carrying out active research in the same areas: their researchers attend the same conferences and collaborate with academics. For instance, we worked alongside scientists from General Motors and I visited them at the central research labs in Michigan. It is, however, up to us to find new applications and for industry to implement them. I hope that our research is helping to solve hydrogen-storage problems. The progress made in recent years leads me to believe that this is happening.

### What do you like most about your job?

Research freedom, the highly qualified team of colleagues that I enjoy working with, and meeting many interesting people who come to the joint ESRF/ILL/EMBL site. In fact, we don’t even have to travel much as the top



Yaroslav Filinchuk putting a sample on the Swiss–Norwegian beamline (BM1) at the ESRF.

researchers come to Grenoble fairly regularly for their own needs, so we are all here in a stimulating environment.

### What do you like the least?

The limits of what I like the most of my job. This translates into a lack of a dedicated research group, which is necessary for the freedom of the scientific activity at a certain stage of the academic career. The fact that the aim of the large facility where I work is to give service to users is inevitably pushing my research interests into the background. I am also missing university life, where people have more time to spend with their colleagues, where they meet not only busy researchers who visit for a quick experiment, but also the students.

### Now that you are a visiting professor at the University of Aarhus, do you enjoy giving lectures?

As a teenager I actively participated in national and international contests in chemistry – known as “olympiads”. This experience helped me to learn how to explain my ideas clearly and in a simple way, but it also made me addicted to the “romantics of education”. I like to communicate with young people and giving lectures or less formal classes is one of the ways to do this. During my time at the University of Aarhus I try to fill the gap between university life and the environment of a large facility. Certainly, this stay allows me to spend more time carrying out research on hydrides and to enjoy the social life with the many interesting people here.

### Do you prefer the environment of the university or the ESRF?

I definitely prefer combining the two. Large facilities play an important role in my scientific life: during my stay in Geneva I worked a lot with neutron diffraction using the Swiss Neutron Source at the Paul Scherrer Institut, where I have made a lot of good friends. I was also a user of the BM1 beamline, where I am working now. Some people are successfully combining the two environments while staying on either side, and it seems that this is what I am doing.

### What have you gained from your experiences at the ESRF?

It has given me experience of teaching and helping different people from around the world, from undergraduate students to professors, to operate the diffraction instruments and to perform their experiments. Our beamline and the large facility as a whole provides an immense variety of options and I am happy to be among the people developing the lab and helping our visitors to use it. This is an important experience that will serve me well during my entire scientific career. It has also enabled me to start an independent research project, which I am succeeding in doing.

### What are your plans for the future?

I am not making any definite plans as it is difficult to map out the future. Having collaboration with PhD students and postdoctoral researchers is a necessity in order to implement the scientific ideas that I currently have. This is a prerequisite for keeping the ongoing work in this dynamic and internationally competitive field and would allow us to move forward.

### How do you see the world, in terms of the environment, in 20 years’ time?

I am very positive about how things have been developing (including environmental standards) during the last few years and over the centuries. Our homes, workplaces, the cities and industries have gradually become safer since the time of the industrial revolution. So I do not have any major concerns about the environment – the ongoing efforts are able to provide our sustainable development for well over 20 years. As for environmental issues, as in many other areas, making responsible decisions and consistently implementing them should suffice for future growth and development. In years to come I see us using less oil and gas as fossil fuel, and with bigger diversity in energy sources, which will make our environment cleaner, economies less vulnerable and, consequently, the quality of life higher. And I hope that cultural diversity will keep pace with the technological one.