Press release

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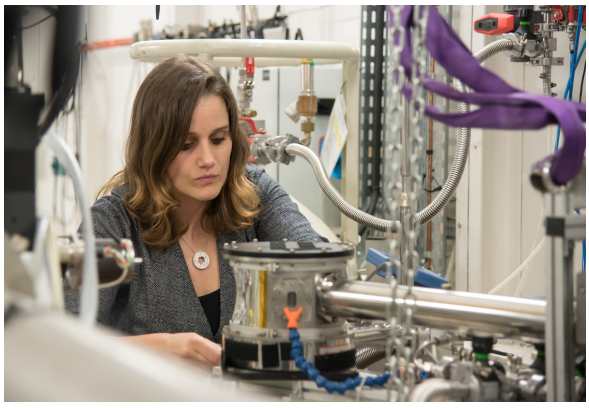
Amélie Juhin wins ESRF Young Scientist award

Amélie Juhin is the winner of the ESRF "Young Scientist of the Year 2017". This award is presented every year by the ESRF Users' Organisation to a scientist aged 37 or younger for outstanding work conducted at the ESRF. This prize is seen as encouragement from the ESRF for a young scientist whose work has already been recognised by peers and produced fruitful results.

Amélie Juhin is a physicist and spectroscopist, researcher at the "Institut de minéralogie, de physique des matériaux et de cosmochimie" (CNRS/Université Pierre et Marie Curie-Sorbonne-Universités/ Institut de Recherche pour le Développement/Museum National d'Histoire Naturelle). She was awarded the prize for her experimental and theoretical studies of resonant X-ray scattering and X-ray dichroism, carried out at the ESRF.

Amélie Juhin's research is focused on probing the electronic and magnetic properties of nanoparticles and molecular magnets. For this research, she uses the powerful X-rays produced by the ESRF, the European synchrotron, in Grenoble. She explores both the experimental and theoretical aspects of soft and hard X-ray spectroscopies and has developed magnetic spectroscopies with X-rays.

Aged just 36, she is already recognised as an international expert in this field. After obtaining a PhD in 2008 from the Université Pierre et Marie Curie, in Paris, Amélie Juhin pursued a post-doctoral fellowship at the Debye Institute for Nanomaterials Science, in The Netherlands. She was recruited by the French National Centre for Scientific Research (CNRS) and joined the Institute of Mineralogy, Physics of Materials and Cosmo-Chemistry (IMPMC) in 2010. Her contribution to the field of dichroism and X-ray resonant inelastic scattering has already earned recognition from her peers as demonstrated by the Farrel Lytle Award from the International X-ray Absorption Society that she received in 2015 and a Bronze Medal from the CNRS in 2016.



Left : Amélie Juhin at the award ceremony of the ESRF Young Scientist Award 2017. Right: Amélie Juhin on ESRF's ID26 beamline.

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Her work revolves around three main themes:

- Molecular magnets,photomagnetic systems and magnetic nanoparticles
- The development of magnetic spectroscopies using the hard X-rays produced at the ESRF
- The interpretation and calculation of different spectroscopies and dichroisms (which measure the dependence of the spectrum as a function of the polarization of the incident beam)

Amélie Juhin has been a regular user at the ESRF's beamlines ID26 and ID12 for more than 10 years. She uses these beamlines to measure and interpret different dichroisms, like X-ray natural linear dichroism (XNLD) and X-ray magnetic circular dichroism (XMCD). Magnetic spectroscopies (XMCD and resonant inelastic X-ray scattering RIXS-MCD) are applied to different systems: molecular magnets, core-shell nanoparticles, magnetic multi-layers and ferrofluids. Through close collaboration with teams from the ESRF, namely with scientists Pieter Glatzel and Mauro Rovezzi on ID26, Amélie Juhin developed a novel magnetic spectroscopy (photon-in, photon-out), the RIXS-MCD. For the magnetism community as well as for other scientific disciplines such as earth sciences, this new magnetic spectroscopy has produced a number of original results which have been the subject of international publications, and it opens new paths of investigation.

This collaboration will be reinforced with the new generation of synchrotrons under construction by the ESRF and scheduled for operation in 2020. As Amélie Juhin underlines: "*with unprecedented performances in terms of brilliance, resolution and beam coherence, the ESRF-EBS project will provide new scientific opportunities that will allow me to take on new challenges in the areas of magnetic nano-sized objects*."