



## European Mineralogical Union

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Dr Nadège Hilaiet

The recipient of the 2019 Research Excellence Award of the European Mineralogical Union is Dr Nadège Hilaiet from the Université de Lille (France). She received the award for her outstanding contributions to understanding rock deformation and rheology, as well as for her international collaborative research.

Below are two statements by medalist Dr Nadège Hilaiet on her works and passions.

### *My best scientific achievements*

My research interests relate to understanding how/when mineralogy affects the dynamics of subduction zones, from long (convection) to shorter (earthquakes) timescales. I carried out some of the first in situ studies on controlled deformation of hydrous phases under high pressure and temperature. These studies used synchrotron radiation to characterize mechanical and microstructural behaviour of the minerals or rocks as they were deforming. I have also worked on phase transformations within subduction zones and their associated relationships with deformation. I joined my expertise of in situ deformation studies with the expertise of colleagues from the École normale supérieure in Paris (France) in acoustic emissions recording. Together, we designed a unique experimental setup to reveal new possible connections between deep earthquakes, phase transitions in olivine, and the mineralogical reactions that occur in subduction zones under high pressure.

### *Why I work as a scientist*

I was very fortunate to have met the right people at the right time, from supervisors, to colleagues and students, and have learned a lot from them. Aside from that, I became a geoscientist because it is a very interdisciplinary field, which also involves chemistry, physics, and material science. As a student, I was drawn to petrology by the beauty of rocks, and I became convinced this was the right path for me the day I saw muscovite under a polarizing microscope. During my PhD and postdoc, I spent days and nights at the synchrotron looking at rocks transforming and deforming under the effects of pressure and temperature. This led to my realization that experiments could help you understand rocks and their behaviour in nature. In my day-to-day research, I am driven by the instant at which the pieces of the puzzle assemble to form a meaningful reality. I now hope I can transfer this interest in high-pressure experiments and mineral deformation to students and young people.

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