

Strategies to use neutrons as an industrial problem-solving tool- Plenary talk

Wednesday, 26 April 2023 14:30 (30 minutes)

For how trivial or provocative it can sound, the best neutron spectrometer in the world does not produce science and technology by itself. By definition of “Materials Science”, neutron scattering data on engineering materials must be used as a tool to understand, and even tailor, materials performance. In order for this to happen, neutron data need to be

1. Acquired under the most relevant condition possible
2. Coupled to other experimental techniques
3. Capitalized by means of proper simulations and data analysis

Point 1- calls for an intense use and the development of top-notch of in-situ techniques; Point 2- means that the sole use of neutron data will not lead to any solution of a global problem; All points above hint to the fact that access to neutron sources is not routine, and therefore it is imperative to search ways to make neutron data rentable and sustainable for the material science and industrial research community.

In this presentation, and based on two examples, we will show a couple of strategies to combine neutron data with other experiments, and with theoretical models to raise the validity of experiments to the level of problem-solving. As one might imagine, these are only a few among the almost infinite combinations possible to help improving material properties, performance, and safety, i.e., ripe for everyday use.

Primary author: Prof. BRUNO, Giovanni

Presenter: Prof. BRUNO, Giovanni

Session Classification: Plenary user presentations