



European Crystallographic Association

ECA

Report for school financial support

1. Date, location and title of meeting:

Title meeting	To.Sca.Lake 3.0. Total Scattering for Nanotechnology on the Como Lake
Location	Villa del Grumello, via per Cernobbio 11, 22100 Como (Italy)
Date	May 27 th -31 st , 2019
Website address	https://tsnl2019.lakecomoschool.org/

2. Please describe how the bursary was used.

ECA generously cosponsored the event with 1000,00 Euros, which were used to cover accommodation and subsistence fees to four young attendees (250,00 Euros) each: Volodymyr Medvediev (Wroclaw, Polish Academy of Sciences), Jonas Palle (Aarhus University, jonaspalle@inano.au.dk), Stefano Toso (IIT, Genova, stefano.toso@iit.it), Maria Jauregui (CIC Energigune, Gasteiz, mjauregui@cicenergigune.com).

3. Report (min. 250 words, max. 500 words, will be published on the ECA web site)

Advanced courses in scattering methods are not typically delivered in Academia and often require the organization of specific events, targeted to Ph.D. students, postdocs and young researchers at the very beginning of their scientific careers. Thanks to the efforts of Lake Como School for Advanced Studies and scientists from University of Insubria and the Institute of Crystallography of the Italian National Research Council (IC-CNR), it was possible to organize, in late May 2019, a successful Summer School in Como, in the beautiful location of the 18th century Villa del Grumello. This event was labelled “*To.Sca.Lake 3.0: Total Scattering for Nanotechnology on the Como Lake*”, following the previous two editions [May 2015 and May 2017], while adding some new topics and hands-on sessions to the schedule. More than 50 participants from 16 Countries worldwide (Italy, Switzerland, Germany, Denmark, Spain, United Kingdom, Croatia, Poland, Czech Republic, Israel, Iran, India, USA, Brazil, South Africa, Costa Rica) attended the School.

The organization of the To.Sca.Lake 3.0 falls well within the educational activities of the To.Sca.Lab. project (see also toscalab.uninsubria.it), a joint laboratory co-founded in 2013 by University of Insubria and the Institute of Crystallography of the Italian CNR, merging experimental and theoretical expertise in chemistry, crystallography and physics, within a unified project based on *scattering* techniques (from X-rays to visible light).

With respect to the previous two editions of the school, already including, as lecturers, world renowned experts in the fields of forefront scattering methods and of nanomaterials preparation, the 2019 event involved some important novelties. To.Sca.Lake 3.0 was indeed primarily devoted to the development of the so-called “complex-modeling” principles for nanostructures characterization: in order to obtain unique structural and microstructural insights on complex materials, infrastructures that can combine information from different techniques and models into a coherent framework are needed. Indeed during the To.Sca.Lake 3.0 the combined use of various complementary scattering techniques, such as Rietveld refinement carried on

simultaneously in real and reciprocal space or the use of the Debye Scattering Equation (DSE) to model both Small Angle (SAXS) and Wide Angle (WAXS) datasets, has been presented. Moreover, a completely new hands-on session on a computer program dedicated to the modeling of SAXS data of inorganic nanoparticles, developed at Aarhus University by Prof. J.S. Pedersen, and distributed for the first time to the school attendees, has been proposed during the last edition, jointly with other popular software: Debussy and PDFGui.

Please return this form (in Word format) within three month after the event to
Prof. Carl Henrik Görbitz
meeting.officer@ecanews.org

A group picture is appreciated!

