



Italian Society of Mineralogy and Petrology

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WORKSHOP REPORT – NEW MINERALS: BETWEEN RESEARCH AND COLLECTING

The informal group GNM (Gruppo Nazionale di Mineralogia), with the support of SIMP and AMI (Associazione Micromineralogica Italiana), held the above-mentioned two-day workshop in Padova on June 17–18, 2013. It took place in the beautiful Palazzo Cavalli, built in the late 15th century by a noble Venetian family and today owned by the University of Padova. The workshop aimed at getting together researchers and mineral collectors, who, by collaborating, will help advance our knowledge in mineralogy.

The lectures were tailored to an audience of PhD students, postdoctoral students, and young researchers. The speakers and their topics were: M. Pasero (New minerals: The rules of the game), R. Oberti (The complex crystal chemistry of amphiboles), F. Bosi (New minerals in the tourmaline supergroup), P. Comodi (The peculiar paragenesis of the suevite from Ries), M. Merlini (Single-crystal microdiffraction using synchrotron radiation), F. Nestola (Diamonds: A natural laboratory for new high-pressure minerals), G. Giuli (Spectroscopic studies of amorphous minerals), C. Biagioni (Mineralogy of the Apuan Alps: Interaction between mineral collectors and researchers), M. E. Ciriotti (Micromineralogists: A different approach to mineral collecting), M. Boscardin (Mineralogical features of the Vicenza area), A. Guastoni (Mineralogical museums: Conservation, communication, research).

All participants were offered guided visits to the mineralogical, geological, and paleontological collections of the University of Padova museum. The workshop was attended by some 60 persons, fairly well distributed between young researchers and amateur mineralogists. Owing to the success of this initiative, plans are being made for another workshop, which will be focused on descriptive mineralogy and collecting issues. Additional information and the pdf's of all talks are available at the website: www.socminpet.it/GNM/padova2013.htm



Speakers during their talks. Left to right, top row: F. Princivalle (GNM chair), M. Pasero, R. Oberti, F. Bosi; middle row: P. Comodi, M. Merlini, F. Nestola, G. Giuli; bottom row: C. Biagioni, M. E. Ciriotti, M. Boscardin, A. Guastoni

2013 SIMP PRIZES FOR PHD STUDENTS



Donato Belmonte: “*Ab initio* thermodynamics of deep-mantle minerals: The system MgO–SiO₂”

First principles calculations of the thermodynamic and thermophysical properties of deep-mantle minerals in the MgO–SiO₂ system have been carried out using the hybrid density

functional theory to get new insights into their phase relations and transitions. The static and vibrational properties of several mineralogical phases of geophysical interest (periclase, stishovite, forsterite, wadsleyite, ringwoodite, anhydrous phase B, HP-clinoenstatite, akimotoite, and majorite) have been fully characterized for a broad range of *P–T* conditions, and they define an internally and physically consistent thermodynamic data set for the computation of phase equilibria at deep-Earth conditions. The inferred mineralogical model emphasizes the crucial role of the non-olivine components in determining the anisotropic seismic velocity structure of the mantle transition zone.



Carmen Capalbo: “Minerals of the hollandite supergroup: Crystal chemistry and thermal behavior”

The minerals of the hollandite supergroup have considerable technological importance, which is related to their microporous features and their cation exchange capability. Several natural specimens of hollandite minerals were investigated by SCXRD at ambient and nonambient conditions. A characteristic displacement of tunnel cations off the special positions at (0,0,0) and (0,0,1/2) was observed, as well as a structural transition from monoclinic to tetragonal symmetry with increasing temperature. TG/DSC and IR analyses confirmed the presence of molecular water in the tunnels. A nomenclature revision and a new classification of the minerals of the hollandite supergroup have been approved by the IMA–CNMNC.



Tommaso Giovanardi: “Petrological, geochemical, and geochronological constraints on the geodynamic evolution of the basic–ultrabasic sequence of Finero (western Southern Alps)”

The Phlogopite–Peridotite unit in the Finero basic–ultrabasic sequence is a unique mantle massif recrystallized during several melt-migration events. Field and laboratory work (microprobe, LA–ICP–MS, zircon ELA–ICP–MS for U and Pb and MC–ICP MS for Lu and Hf isotope determinations, laser fluorination for O and H isotope concentrations) have led to a model for the evolution of the massif. The geochemical signature and isotopic values of massif rocks together with calculated melt compositions indicate a strong crustal component in the migrating melts, providing constraints for a Triassic subduction zone in the Southern Alps.



Valentina Rimondi: “Distribution of mercury and other trace elements in the Mt. Amiata region (southern Tuscany, Italy)”

The Mt. Amiata region was the 4th-largest mercury-producing district worldwide and was active up to the 1980s. I considered different aspects of the environmental impact of Hg mining, focusing on the watershed of Paglia River (PR), on the eastern side of Mt. Amiata. The main goals were: (1) to establish an updated picture of Hg and methyl-Hg diffusion and distribution in the PR ecosystem; (2) to estimate the mass load of Hg transported by the PR; (3) to characterize Hg speciation – and hence its bioavailability – in different environmental matrices; and (4) to define the regional background for Hg to discriminate between anthropogenic versus natural contamination.