Italian Society of Mineralogy and Petrology

www.socminpet.it

SIMP PRIZES FOR PHD STUDENTS IN 2010

SILVIO FERRERO
FOR "ANATECTIC MELT IN A METAPELITIC SYSTEM: A FLUID AND MELT INCLUSION STUDY"

The characterization of anatexis in metapelites is fundamental to understanding the geochemical differentiation of the continental crust. Natural anatectic melts were investigated in khondalites (Kerala Khondalite Belt, India) and granulitic enclaves (El Hoyazo, Spain) using a novel approach based on the study of melt and fluid inclusions in peritectic garnets. Anatectic melt inclusions in khondalites contain a peraluminous and ultrapotassic melt with ~1–2 wt% water, while a peraluminous, undersaturated melt was trapped along with a water-rich fluid in the El Hoyazo enclaves. The results show that we can now analyze crustal melt composition rather than assume it, thereby obtaining reliable petrological and geochemical information on anatexis from nano- to microscale objects.

GIUSEPPE MICCICHÉ
FOR "ATOMISTIC SIMULATION OF LAYERED SILICATES IN THE MUSCOVITE–CELADONITE SYSTEM"

Ab initio (DFT) and cluster expansion methods were used to calculate the variations of the lattice energy between ordered and disordered structures of very large supercells along the muscovite–celadonite solid solution join. Thermodynamic models for muscovite, phengite and celadonite were developed and, through Monte Carlo simulations, the entropy and free energy were calculated. The atomistic NMR spectra obtained are in very good agreement with spectral data from experiments. Our results suggest that the Al/Si distribution appears to be a good indicator of the temperature. Moreover, our model for muscovite appears to be quantitative and, therefore, can be used as a one-mineral geothermometer.

EUGENIO NICOTRA
FOR "GENESIS AND DIFFERENTIATION OF ANCIENT MT. ETNA MAGMAS (ELLITTICO VOLCANO, 40–15 KA): A MULTIDISCIPLINARY APPROACH FROM GEOLOGY TO MELT INCLUSIONS"

The study of the volcanological features of an ancient eruptive center at Mt. Etna may allow the understanding of the present-day magmatic system. A multidisciplinary study of the Ellittico volcano, embracing geology, whole rock geochemistry (major and trace elements; Sr–Nd–Pb–O isotopes), petrography and olivine-hosted melt inclusions was performed. Results shed light on: (1) the origin of these magmas from metasomatized, recycled, oceanic lithosphere; (2) the geometry of the feeder system and differentiation processes in the Ellittico volcano; and (3) the development of halogen-rich magmas due to the influx of volatiles into the feeder system.

LUCA VALENTINI
FOR "GEOCHEMICAL AND NUMERICAL MODELLING OF THE INTERACTION BETWEEN CARBONATITE AND SILICATE MAGMAS"

Carbonatites are exotic igneous rocks with significant economic importance due to their enrichment in rare minerals. Although carbonatite magmas may occur in spatial and temporal association with silicate magmas, their modes of interaction remain unclear. The combined geochemical and numerical models reported in this thesis attempt to clarify the dynamics of carbonatite–silicate magmatic pairs; the results show that textural interpretation may lead to equivocal conclusions. Even in the miscible regime, small-scale emulsions may form as a result of gradient stresses known as Korteweg stresses. The strong rheological contrast, from which Korteweg stress originates, strongly hinders mechanical mixing of carbonatite and silicate magmas.

The First **European Mineralogical Conference** will be held at the Goethe-University in Frankfurt, Germany, **2-6 September 2012.**

planet earth
from core to surface
emc2012
2 - 6 September
european mineralogical
conference · frankfurt / main
germany

The contributing societies presently are:

DMG	**Deutsche Mineralogische Gesellschaft**
MinSoc	**Mineralogical Society of Great Britain & Ireland**
ÖMG	**Österreichische Mineralogische Gesellschaft**
PTMin	**Mineralogical Society of Poland**
SEM	**Sociedad Española de Mineralogía**
SFMC	**Société Française de Minéralogie et de Cristallographie**
SIMP	**Societa' Italiana di Mineralogia e Petrologia**
SSMP	**Swiss Society of Mineralogy and Petrology**

Suggested themes for the meeting are as follows: Mantle petrology and geochemistry; Magmatism; Metamorphism; Applied mineralogy; Clay mineralogy; Mineral physics; Planetary materials; Mineral deposits and raw materials; Low T geochemistry; Geochronology; Geobiochemistry; Advanced analytical techniques; Archaeometry, care and preservation; Open session.
The meeting will provide the frame for the individual societies' award and lecture scheme, for the IMA business meeting, and the IMA medal presentation. The scientific committee will consist of one representative of each society.

The local organizing committee: Gerhard Brey, Heidi Höfer, Sabine Seitz