



MAURIZIO PETRELLI (PhD)

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EDUCATION

Phd, Earth Sciences, February 2006, University of Perugia

Research: Developments of non-linear dynamics during mixing of magmas: transition to chaos and implications for time-scales of magma hybridization.

BS, Earth Sciences, September 2001, University of Perugia

Research: archaeometric study of travertine samples by artificial intelligence techniques.

SKILLS

Laboratory:

Strong skills in Laser Ablation ICP-MS; experiences in XRF, EPMA and SEM.

Computer:

Microsoft Visual Basic, Mathworks Matlab, Ms Office Applications, Adobe Photoshop, Corel Graphic Suite, Macromedia Dreamweaver.

Languages:

Italian, English.

LAB EXPERIENCES

Setting Up the Perugia University LA-ICP-MS Laboratory (S.M.A.Art Facilities)

2003 - present

Perugia University LA-ICP-MS Lab (http://www.unipg.it/~maurip/LA_ICP_MS/index.html)

SELECTED SCIENTIFIC PUBLICATIONS:

1. **Petrelli M.**, Perugini D., Moroni B. & Poli G. (2003) - Determination of Travertine Provenance from Ancient Buildings Using Self-Organizing Maps and Fuzzy Logic - *Applied Artificial Intelligence*, 7, 8-9, pp. 885-900.
2. Perugini D., Ventura G., **Petrelli M.**, Poli G. (2004) - Kinematic Significance of Morphological Structures Generated by Mixing of Magmas: a Case Study from Salina Island (Southern Italy), *Earth and Planetary Science Letters*, 222, pp.1051-1066.
3. **Petrelli M.**, Perugini D., & Poli G. (2006) - Time-Scales of Hybridisation of Magmatic Enclaves in Regular and Chaotic Flow Fields: Petrologic and Volcanologic Implications, *Bulletin of Volcanology*, 68 (3), 285-293.
4. Perugini D., **Petrelli M.** & Poli G. (2006) - Analysis of Concentration Patterns in Volcanic Rocks: Insights into Dynamics of Highly Explosive Volcanic Eruptions, *Physica A: Statistical Mechanics and its Applications*, 370 (2), 741-746.
5. **Petrelli M.**, Poli G., Perugini D. & Peccerillo A. (2005) - Petrograph: a New Software to Visualize, Model, and Present Geochemical Data in Igneous Petrology, *Geochem. Geophys. Geosyst.*, Vol. 6, Q07011, DOI 10.1029/2005GC000932, 26 July 2005.
6. Perugini D., **Petrelli M.** & Poli G. (2006) - Diffusive Fractionation of Trace Elements by Chaotic Mixing of Magmas, *Earth and Planetary Science Letters*, 243 (3-4), 669-680.
7. **Petrelli M.**, Caricchi L. & Ulmer P. (2007) - Application of High Spatial Resolution Laser Ablation ICP-MS to Crystal-Melt Trace Element Partition Coefficient Determination, *Geostandard and Geoanalytical Research*, accepted on 15-11-2006.
8. **Petrelli M.**, Poli G., Perugini D. & Peccerillo A. (2007) - Graphite Electrode Lithium Tetraborate Fusion for Trace Element Determination in Bulk Geological Samples by Laser Ablation ICP-MS, *Microchimica Acta*, accepted on 21-12-2006.