

## Andrea Dini

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## University Education

1992 Laurea in Scienze Geologiche, Università degli Studi di Pisa

1997 Ph.D. in Earth Sciences, Università degli Studi di Pisa

## Employment following Ph.D.

- Consulting Geologist for Sardinia Gold Mining S.p.A. - regional and drilling exploration of Sardinia gold deposits (1998-1999)
- Contract Researcher at Istituto di Geoscienze e Georisorse – CNR (1999-2008)
- Researcher at Istituto di Geoscienze e Georisorse – CNR (from april 2008)
- Habilitation as Associate Professor-04/A1 (from February 2014)

## Selected Appointments, Honors and Awards

- 2014-2015 Visiting Professor at Département des Sciences de la Terre, Université de Geneve (Switzerland)
- 2007 “Johndino Nogara Award” for Ore Deposits of the Società Italiana di Mineralogia e Petrologia (SIMP)
- from 2016 Responsible for the Rock & Mineral Preparation Laboratory and Rock Repository at Istituto di Geoscienze e Georisorse – CNR
- 2002-2015 Responsible for the TIMS Mass Spectrometry Laboratory at Istituto di Geoscienze e Georisorse – CNR
- 2008-2015 Member of the Scientific Board of Istituto di Geoscienze e Georisorse – CNR

## Coordination and participation to national and international projects

### *Coordinator in National Projects*

- 2010-2012 Coordinator of CNR Local Units (*Relazioni petrogenetiche, temporali e geometriche tra giacimenti “tipo skarn” e intrusioni tabulari: gli esempi di Campiglia Marittima e dell’Isola d’Elba orientale*) in the PRIN-MIUR 2008PN8Z9K Project “*Flusso di magma e crescita delle intrusioni ignee tabulari*” (National Coordinator Dr. Sergio Rocchi, Pisa University).
- 2001-2003 Coordinator of the CNR-Agenzia 2000-Giovani Project “*B, O, Sr, Nd isotopes, fluid inclusions, mineral chemistry*) of tourmaline in Tertiary granitic rocks from Tuscany (Italy): implication for crustal processes and geochemical behaviour of boron” (Contract N° CNRG00C4AE).

### *Participant in National Projects*

- 2006-2008 MIUR-PRIN, *Approccio integrato geologico-geofisico finalizzato allo studio delle relazioni tra strutture tettoniche e modalità di messa in posto di intrusioni nella crosta superiore: il margine interno dell’ Appennino Settentrionale* (Coordinator Dr. F. Sani, Università di Firenze; Contract N° 2005040459).
- 2004-2006 MIUR-PRIN, *Evoluzione del vulcanismo retro arco e tettonica lungo le strutture trasversali trascorrenti nelle Ande centrali* (Coordinator Dr. R. Mazzuoli, Università di Pisa; Decreto 197 Area 04/18).

- 2004-2006 PNRA 2004/4.1, *Il magmatismo Cenozoico della Terra Vittoria: un tracciate dei processi geodinamici e dell'evoluzione climatica globale* (Coordinator Dr. S. Rocchi, Università di Pisa; Contract N° 107/04/M - 2004/4).
- 2004-2006 PNRA 2004/4.6, *Zonazione dinamica e cronologica dell'Orogene di Ross* (Coordinator Dr. S. Rocchi, Università di Pisa; Contract N° 107/04/M - 2004/4).
- 2000-2002 MIUR-PRIN, *L'eredità litosferica mesozoica tetidea nei processi subduttivi e collisioni del Mediterraneo centro-orientale* (Coordinator Dr. C. Doglioni, Università di Roma La Sapienza; Decreto 503 Area 04/10).
- 1998-2000 MIUR-PRIN, *Geodinamica delle zone estensionali in ambiente collisionale e intraplacca: aspetti geologici, geofisici e magmatologici* (Coordinator Dr. P. Manetti, Università di Firenze; Decreto 56 Area 04/08).

#### *Coordinator in International Projects*

- 2015-2018 WorkPackage leader (WP4 Reservoir Characterization) in the Horizon 2020 Project: "DESCRAMBLE" (*Drilling in dEep, Super-Critical AMBients of continental Europe*; Contract 640573, Topic LCE-02-2014).
- 2015 Italian Coordinator of the project funded by the Herbette Foundation-Université de Lausanne (Swiss Coordinator Dr. Lukas Baumgartner): "*Ion Microprobe analysis of Boron, oxygen and hydrogen isotopes in hydrothermal systems*".
- 2014 Italian Coordinator of the project funded by the Swiss National Foundation (Swiss Coordinator Dr. Urs Schaltegger): "*Timescales of crustal magmatism and associated hydrothermal systems in Tuscany and implications for the geothermal field of Larderello*".

#### *Participant in International Projects*

- 2013-2017 Participant in the European 7<sup>th</sup> FP Project: "IMAGE" (*Integrated Methods for Advanced Geothermal Exploration*; Contract 640573, Agreement N° 608553).

#### **Affiliations and editorial activity**

- Member of the Società Italiana di Mineralogia e Petrologia (SIMP) since 1995.
- Guest Editor of a special issue for Physics and Chemistry of the Earth (2005)
- Guest Editor of a special issue for Periodico di Mineralogia (2003)
- Guest Editor of special issues for Rivista Mineralogica Italiana (2009, 2013)

#### **Main expertise and fields of research interest**

His research activity has been devoted to four different areas:

- a) Magmatic-hydrothermal (and geothermal) systems in post-orogenic extensional settings
- b) Marine hydrothermal systems at mid-ocean spreading ridges
- c) Abyssal and ophiolitic serpentinites
- d) Ore minerals and deposits

Employed techniques are: 2D/3D mapping of intrusive and hydrothermal systems (surface + mining undergrounds); quantitative petrography (SEM-EDS, QEMSCAN, microRaman); powder X-ray diffraction; Geochemistry and Isotope geochemistry (ICP-MS, TIMS and MC-ICPMS) and isotope dating (ID-TIMS U-Pb, Rb-Sr). He has authored more than 60 publications on peer reviewed international journals. H index: 20.

## Selected Publications

1. FARINA F., DINI A., DAVIES J.H.F.L., OVTCHAROVA M., GREBER N.D., BOUVIER A.S., BAUMGARTNER L., ULIANOV A., SCHALTEGGER U. (2018) Zircon petrochronology reveals the timescale and mechanism of anatectic magma formation. *Earth and Planetary Science Letters*, **495**, 213-223.
2. BOSCHI C., DINI A., BANESCHI I., BEDINI F., PERCHIAZZI N., CAVALLO A. (2017) Brucite-driven CO<sub>2</sub> uptake in serpentinized dunites (Ligurian Ophiolites, Montecastelli, Tuscany). *Lithos*, **288-289**, 264-281.
3. BAUMBERGER T., FRÜH-GREEN G.L., DINI A., BOSCHI C., VAN ZUILEN K., THORSETH I.H., PEDERSEN R.B. (2016) Constraints on the sedimentary input into the Loki's Castle hydrothermal system (AMOR) from B isotope data. *Chemical Geology*, **443**, 209–226.
4. ROCCHI S., DI VINCENZO G., DINI A., PETRELLI M., VEZZONI S. (2015) Time– space focused intrusion of genetically unrelated arc magmas in the early Paleozoic Ross–Delamerian Orogen (Morozumi Range, Antarctica). *Lithos*, **232**, 84-99.
5. FARINA F., DINI A., ROCCHI S., STEVENS G. (2014) Extreme mineral-scale Sr isotope heterogeneity in granites by disequilibrium melting of the crust. *Earth and Planetary Science Letters*, **399**, 113-115.
6. BIAGIONI C., D'ORAZIO M., VEZZONI S., DINI A., ORLANDI P. (2013) Mobilization of Tl-Hg-As-Sb-(Ag,Cu)-Pb sulfosalt melts during low-grade metamorphism in the Alpi Apuane (Tuscany, Italy). *Geology*, **41**, 747-750.
7. FARINA F., DINI A., INNOCENTI F., ROCCHI S., WESTERMAN D.S. (2010). Rapid incremental assembly of the Monte Capanne pluton (Elba Island, Tuscany) by downward stacking of magma sheets. *Geological Society of America Bulletin*, **122**, 1463-1479.
8. DINI A., MAZZARINI F., MUSUMECI G., ROCCHI S. (2008). Multiple hydro-fracturing by boron-rich fluids in the Late Miocene contact aureole of eastern Elba Island (Tuscany, Italy) Source. *Terra Nova*, **20**, 318-326.
9. BOSCHI C., DINI A., FRÜH-GREEN G.L., KELLEY D.S. (2008). Isotopic and element exchange during serpentinization and metasomatism at the Atlantis Massif: Insights from B and Sr isotope data. *Geochimica et Cosmochimica Acta*, **72**, 1801-1823.
10. DINI A., GIANELLI G., PUXEDDU M., RUGGIERI G. (2005). Origin and evolution of Pliocene–Pleistocene granites from the Larderello geothermal field (Tuscan Magmatic Province, Italy). *Lithos*, **81**, 1-31.