



Donato Belmonte

Associate professor

✉ donato.belmonte@unige.it

☎ +39 0103538136

Education and training

2009

M.Sc. Degree in Geology

Ab initio thermodynamic and thermophysical characterization of oxides and silicates in the system Mg-Si-O - 110/110 cum laude

University of Genova - Genova - IT

Academic experience

2010 - 2012

Ph.D in Computational Geochemistry

University of Genova - Genova - IT

Ab initio thermodynamics of deep mantle minerals the system MgO-SiO₂

2013 - 2016

Research Associate (Ricercatore a Tempo Determinato RTD tipo a)

University of Genova - Genova - IT

2016

Invited Visiting Scientist (Maître de conférences invité) in the framework of IPGP Visiting Professor Program 2016

Institut de Physique du Globe de Paris (IPGP) - Paris - FR

Combining DFT and computational thermodynamics to predict melting behaviour of dense magnesium silicates in the deep mantle

2016 - ONGOING

Assistant Professor (Ricercatore a Tempo Determinato RTD tipo b) (tenure-track position)

University of Genova - Genova - IT

2018 - ONGOING

Scientific Habilitation (ASN) to Associate Professor (04/A1 Geochemistry Mineralogy Petrology Volcanology and Georesources)

Ministero dell'Istruzione dell'Università e della Ricerca (MIUR) - IT

Teaching activity

Currently, I am lecturer in charge of the 'Volcanology' course for the Master Degree Course (Laurea Magistrale) and co-lecturer of the 'Geochemistry' course for the Bachelor Degree Course (Laurea Triennale) in Geological Sciences at University of Genova.

I was supervisor of 12 B.Sc. Thesis, 6 M.Sc. Thesis and 4 curricular traineeships.

I was Tutor of Mathematics and Physics for the Bachelor Degree Course in Geological Sciences at University of Genova.

Postgraduate research and teaching activity

PhD committees membership

2017 – Member of the Doctoral Committee, Dottorato di Ricerca in Scienze della Terra Ciclo XXIX, University of Parma (Italy) – Candidates: Claudia Stangarone (Tutors: M.Tribaudino, M. Prencipe), Claudia Gori (Tutor: M. Tribaudino) – Members of the Doctoral Committee: Mario Tribaudino (University of Parma), Gianni Andreozzi (University “La Sapienza” of Rome), Donato Belmonte (University of Genova)

2018 – Member of the Doctoral Committee, Dottorato di Ricerca in Scienze della Terra e dell’Ambiente Ciclo XXXII, University of Pavia – Candidate: Mara Murri (Tutors: M.C. Domeneghetti, M. Prencipe, B. Mihailova, R.J. Angel) – Members of the Doctoral Committee: Andrea Longo (University of Pavia), Fernando Cámara Artigas (University of Milan), Donato Belmonte (University of Genova)

Postgraduate (PhD) teaching activity

Currently, I am lecturer in charge of the 'Introduction to Mineral Physics' course for the Ph.D course in 'Scienze e Tecnologie per l'Ambiente e il Territorio' (STAT), University of Genova.

Research interests

Ab initio thermodynamics and geochemistry of solids, glasses, fluids, melts
Computational mineral physics, lattice dynamics and thermochemistry of minerals at high pressure and temperature conditions
Computational thermodynamics: phase diagrams and melting phase relations in the Earth's deep interior

Grants

2008 - 2010

PRA 2008 - Thermodynamic properties of aliphatic phases in the system Mg-Si-O-H

University of Genova - IT

6.500 Euro - Participant

2011 - 2013

PRA 2011 - Ab initio characterization of seismic discontinuities in the Earth's mantle

University of Genova - IT

3.500 Euro - Participant

2011 - 2013

PRIN MIUR 2009 - Topology of phase diagrams and lines of descent in the system NKCMAS-H₂O-CO₂ and geochemical implications

Ministero dell'Istruzione dell'Università e della Ricerca (MIUR) - IT

55.000 Euro - Participant

2012 - 2014

PRA 2012 - Relations between minerals and potentially toxic elements in sulfide ores of Eastern Liguria

University of Genova - IT

7.259 Euro - Participant

2013

Lines of descent - Visionair project N. 72

Visionair (Project funded by the European Commission under Grant Agreement No. 262044) - FR

1.200 Euro - Participant

2013

AMIU Genova Contract N. 668/2013 - Assessment of geochemical data of aqueous solutions in the waste disposal site of Scarpino (Genova)

AMIU Genova - IT

20.570 Euro - Participant

2013 - 2015

PRA 2013 - Thermodynamics of silicate melts at high pressure - Numerical simulations and geochemical implications

University of Genova - IT

3.011 Euro - Principal investigator

2013 - 2015

MINERABILIA - Renewal and exposition of mineralogical and geological collections of the Natural History Museum Giacomo Doria of Genova

Ministero dell'Istruzione dell'Università e della Ricerca (MIUR) - IT

3.500 Euro - Participant

2014 - 2016

PRA 2014 - Ab initio thermodynamic and crystal-chemical characterization of manganese oxides pyrolusite (MnO₂) bixbyite (Mn₂O₃) and manganosite (MnO)

University of Genova - IT

5.007 Euro - Principal investigator

2014 - 2016

IDEAL-E - Dynamic geochemical interactions among aquifers of Liguria - Entella

IREN and Mediterranea delle Acque - IT

80.000 Euro - Participant

2017 - ONGOING

FFABR 2017 - Finanziamento MIUR delle Attività Base di Ricerca per Ricercatori Legge 11 dicembre 2016 n. 23

Ministero dell'Istruzione dell'Università e della Ricerca (MIUR) - IT

3.000 Euro - Principal investigator

2018 - ONGOING

MATRAC (CNR-IFREMER-University of Genova)

European Community - Interreg Italy-France Maritime 2014-2020

260.000 Euro - Participant

Editorial activity

2016 - ongoing – Member of the Editorial Board of *Rivista Mineralogica Italiana*, edited by Gruppo Mineralogico Lombardo - Associazione Italiana di Mineralogia (GML-AIM).

2016 - ongoing – Member of the Editorial Board of the journal *PLINIUS*, Italian Supplement of the *European Journal of Mineralogy*, edited by the Italian Society of Mineralogy and Petrology (SIMP).

I am reviewer for the following ISI journals: *Geochimica et Cosmochimica Acta*, *Chemical Geology*, *Lithos*, *American Mineralogist*, *Zeitschrift für Kristallographie*, *Mineralogical Magazine*, *European Journal of Mineralogy*, *Physics and Chemistry of Minerals*, *Physical Chemistry Chemical Physics*, *Journal of Physics and Chemistry of Solids*, *Nuclear Engineering and Design*, *Computational Materials Science*, *Journal of Applied Physics*.

Assignments abroad

In 2016 I was invited as *Maître de conférences invité (Invited Visiting Scientist)* at Institut de Physique du Globe de Paris (IPGP) (Paris, France) in the framework of "IPGP – Visiting Professor Program 2016". The title of the research project was: '*Combining DFT and computational thermodynamics to predict melting behaviour of dense magnesium silicates in the deep mantle*'. The results of this research were published on the journal *Chemical Geology* in 2017 (Belmonte, D. et al., 2017, The system MgO-Al₂O₃-SiO₂ under pressure: A computational study of melting relations and phase diagrams,

Chem. Geol., 461, 54-64).

Other professional activities

2014 – Convenor of the session “*Looking inside the planet Earth: Experimental and Computational methods in Mineralogy and Geochemistry*” at the SGI-SIMP 2014 Congress “The Future of the Italian Geosciences - The Italian Geosciences of the Future”, Milan, 10-12 September 2014.

2015 – Convenor of the session “*Experimental and Computational Methods in Mineralogy and Geochemistry*”, at the SIMP-SGI-So.Ge.I.-AIV 2015 Congress “Il Pianeta Dinamico: sviluppi e prospettive a 100 anni da Wagener”, Florence, 2-4 September 2015.

2015 – Chair of the *Poster Session* at the 10th Silicate Melt Workshop, La Petite Pierre (Alsace, France), 13-17 October 2015.

2017 – Convenor of the session “*Computational Geochemistry and Mineral Sciences: new developments and future directions*”, SIMP-SGI-AIV-So.Ge.I. 2017 Congress “Geosciences: a tool in a changing world”, Pisa, 3-6 September 2017.