

Code B_2709

Department	Chemical and Geological Science
UniCa reference person	Gabriele Cruciani
Project title in English	The P-T history of Variscan metamorphic rocks unravelled from equilibrium phase diagram and garnet composition
Project title in Italian	Evoluzione P-T di rocce metamorfiche varisiche: diagrammi di fase e composizione del granato
Subject area of reference (World University Ranking)	PHYSICAL SCIENCES (inc. Mathematics, Chemistry, Geology, Earth & Marine Sciences)
Project summary and VPS' profile	<p>The P-T history of metamorphic rocks is important for the reconstruction of mechanisms and rates of exhumation because it is a useful link between petrographic observations and geodynamic evolution of collisional chains. Although high-grade rocks are often strongly re-equilibrated during exhumation, some microdomains and some mineral phases can escape re-equilibration and provide information about the baric and thermal peak. The main tool for the reconstruction of P-T paths consists in the equilibrium phase diagrams whereas the most important mineral useful to constrain P-T equilibria is by far metamorphic garnet. This mineral, nowadays considered to be the most useful one for the investigation of basement geology, can provide several information on P-T changing conditions during its growth. New techniques in garnet dating (in-situ U-Pb garnet dating, Lu/Hf geochronology, etc.) are also fundamental to better constrain the timing of the garnet-forming stages. This VP project intends to study some selected medium- to high-grade metapelite and meta-igneous samples from the Variscan belt of southern Corsica, with special reference to garnet-bearing rocks. A short-term position as Visiting Professor is requested at the Dipartimento di Scienze Chimiche e Geologiche for teaching and research in the field of (i) compositional zoning (major and trace elements) in garnet, and (ii) equilibrium phase diagrams, geothermobarometry and P-T trajectories. The VP is expected to contribute to research activities and to teach with seminars to Master student in Geology and to students attending the PhD course in Scienze e Tecnologie della Terra e dell'Ambiente. The applicant should have full experience in: (i) identification and interpretation of prograde and retrograde mineral assemblages; (ii) geothermobarometry, equilibrium thermodynamics, pseudosection modeling; (iii) P-T path reconstruction; (iv) linking P-T paths with metamorphic events and orogenic processes.</p>
Proposed length of stay	Short visit of 10 days
Expected period of activity	February or September 2024
Academic position of the VPS'	Professor
Course of Study	Laurea magistrale (2nd cycle University Degree), Dottorato di ricerca (PhD Course)
Language of instruction	English