



Melt Inclusions and Crystal Zoning: Keys to Decipher Mantle Sources, to Understand Magmatic Processes, and to Characterize their Associated Time Scale

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Deadline for manuscript
submissions:
closed (30 April 2020)

Message from the Guest Editors

Dear Colleagues,

In the past decade, melt inclusions and crystal zoning patterns have been widely recognized to provide valuable geochemical and petrological information. Melt inclusions are used to characterize mantle heterogeneity, the geochemical composition of the magma source, mantle oxidizing conditions, and composition of fluid addition in the mantle. Measurement of volatiles in melt inclusions also allows estimation of minimum pressure of entrapments and characterization of magma degassing. Modeling of trace elements compositions in melt inclusions or zoned crystals provides valuable information about crystal and melt inclusion formation, melt transport, and time scale of transport and cooling.

This Special Issue encourages submissions of studies that (a) bring new understanding on small- or large-scale magmatic processes and/or (b) that constrain their associated timescales. We invite papers with new exciting petrological, geochemical, experimental, and modeling data in melt inclusions and zoned crystals. Articles on new or improved in situ analytical technics and development of new isotope systems on small objects are welcome.





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Message from the Editor-in-Chief

Understanding the Earth's origin and its bio-geological evolution, the multiple implications of the geosciences (as a coherent set of interconnected disciplines), and the sociocultural and ethical interdisciplinary approaches, will be crucial for a better understanding of Nature, and also for undertaking scientifically based political decisions.

We are committed to drive *Geosciences* to a position in which it is recognized for its high-quality, cutting-edge research and scientific influence, and strongly encourage and invite your participation and manuscripts.

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