



## Highly Siderophile Elements and Their Isotopes in the Earth's Mantle

Guest Editor:

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### Message from the Guest Editor

Dear Colleagues,

Absolute and relative abundances of the highly siderophile elements (HSE = PGE (Os, Ir, Ru, Rh, Pt, Pd), Re, Au) and their isotopes are important for geological, petrological, and geochemical investigations. Since Re and Os have strongly contrasting partitioning behavior during mantle melting and magma differentiation, the  $^{187}\text{Re}$ – $^{187}\text{Os}$  isotopic system is particularly useful in (i) distinguishing between crustal and mantle sources of the HSE and (ii) tracking melt extraction events, which can be applied at both the whole-rock and mineral (i.e., chromite, Ru–Os–Ir alloy, sulfide) scale. Further advances in mass spectrometry have allowed PGE alloys and sulfides to be dated using the  $^{190}\text{Pt}$ – $^{186}\text{Os}$  system. In order to gain further insights into large-scale geodynamic processes as well as the concentration of the HSE at the local scale, we invite contributions that use combined mineralogical, geochemical and isotopic studies, including the integration of whole-rock and mineral separate (via N-TIMS) and sub-grain scale (via LA-MC-ICPMS) Pt–Re–Os isotopic data from a selected set of rocks and robust minerals (e.g., chromite, PGE alloy) derived from various mantle domains. The latter may include, but are not limited to: komatiite systems, mantle xenoliths, abyssal peridotites, deep portions of ophiolite sections within the oceanic mantle, orogenic peridotite massifs, typical of subcontinental lithospheric mantle, and spatially associated PGE placer deposits.

Dr. Kreshimir N. Malitch  
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