Iron isotopes ratios disparity in the solar system

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Iron is the third most abundant element on Earth (McDonough 2003), and is present as a major element in both the core and the mantle. Iron isotopes are therefore well suited to record fractionating processes that occurred during the formation and differentiation of the Earth. The Bulk Silicate Earth (BSE), and the mantle of other bodies of the solar system such as the Moon, Mars and Vesta, present heavier iron isotope compositions than the chondrites. Several processes could explain such an isotopic signature. First the enrichment in heavier isotopes in the mantle could be the result of volatile loss of iron during the earlier stages of the Earth by degassing of a deep magma ocean. A second possibility is the preferential storage of the lighter iron isotopes into the core during the Earth's differentiation.
Recent study by Elardo and Shahar (2017) propose that this heavy BSE signature is the product of both light Fe enrichment of the mantle during core formation and heavy Fe isotope enrichment during the subsequent magma ocean crystallization and mantle melting. Their model is based on an experimentally determined core-mantle isotopic fractionation that increases with the nickel content of the core.
This raises questions regarding the generally accepted assumption evinced by Huang and Badro (2018) that Fe-Ni alloys are ideal and that the nickel content of the core has no effect on its physical (e.g. density, compressibility) and chemical properties.
We therefore performed novel measurements of experimental iron isotopic fractionation between metal and silicate for a range of Ni content of the core from 0 to 70 wt.%. We show that the isotopic composition of the silicate part of experiments could be influenced by the capsule material and that it is possible that the nickel content of the metal is not a valid explanation for the variations of iron isotopes between different solar system materials.