

Chemical reactions between Iron and $(\text{Mg}_{0.9}\text{Fe}_{0.1})\text{SiO}_3$ perovskite at high-pressure and high-temperature

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To reveal phase relations at the core mantle boundary, we have made experiments on phase relations between $(\text{Mg}_{0.9}\text{Fe}_{0.1})\text{SiO}_3$ perovskite and iron using the laser-heated diamond cell (DAC) in the pressure range of 27-50GPa.. The results demonstrate that chemical reactions reported by previous studies can only occur under the condition that $(\text{Mg}_{0.9}\text{Fe}_{0.1})\text{SiO}_3$ perovskite melts incongruently.

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