

High-pressure and high-temperature experiments of the system Fe-FeO: Origin of the apparent immiscible textures

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In order to study the light elements in the earth's core, high-pressure phase relations in the system Fe-FeO is very important. We revisited the system at 15GPa and compared our result with those by Ringwood and Hibberson (1990). We interpreted various quench textures of the run products and concluded that solubility of FeO in molten Fe is only up to 20mol% at 2200deg.C whereas Ringwood and Hibberson predicted that the immiscibility would disappear at this temperature.

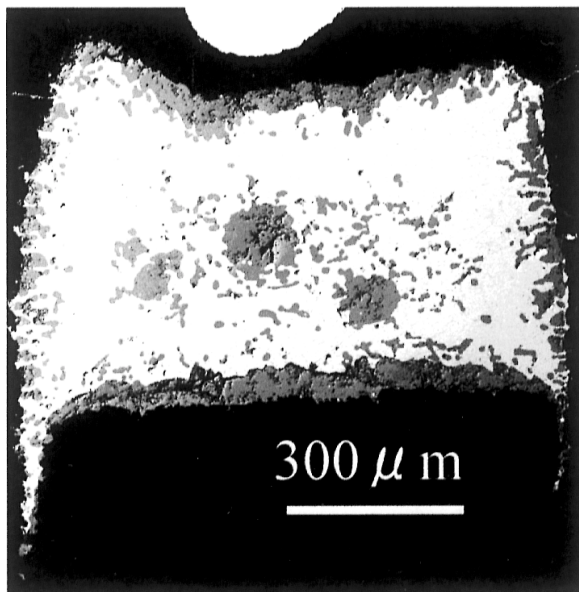


Fig. 1. 1800°C, 15GPa

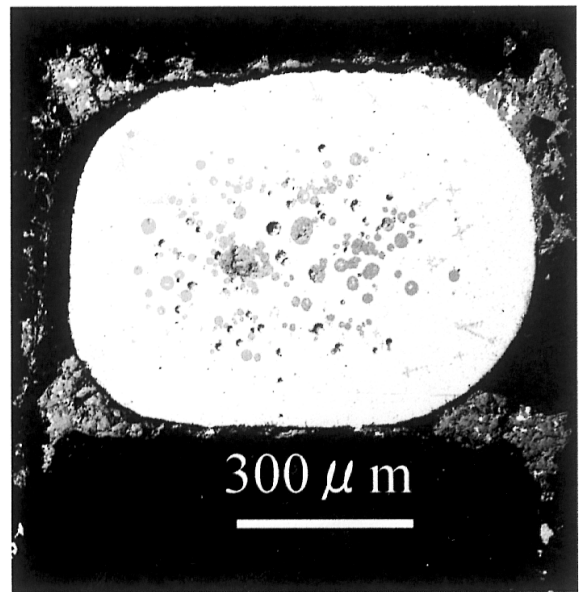


Fig. 2. 1900°C, 15GPa

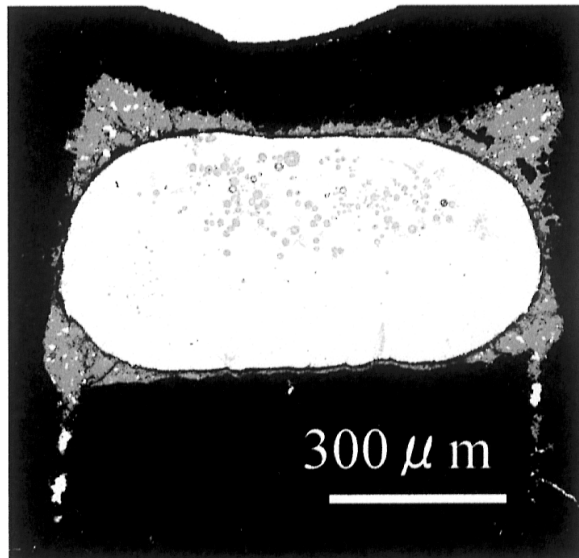


Fig. 3. 2100°C, 15GPa

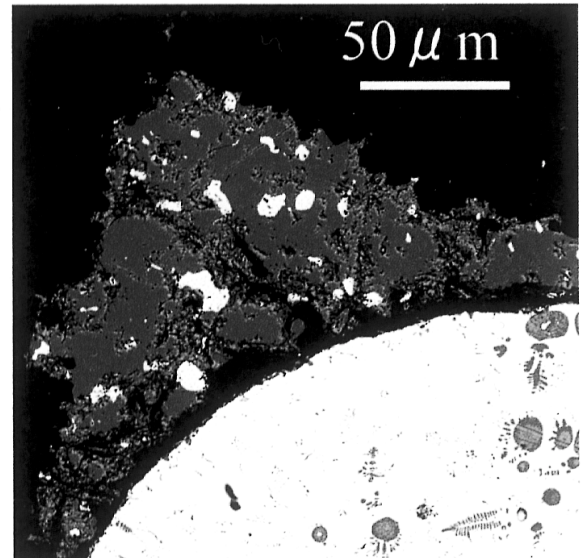


Fig. 4. enlarged Fig. 3

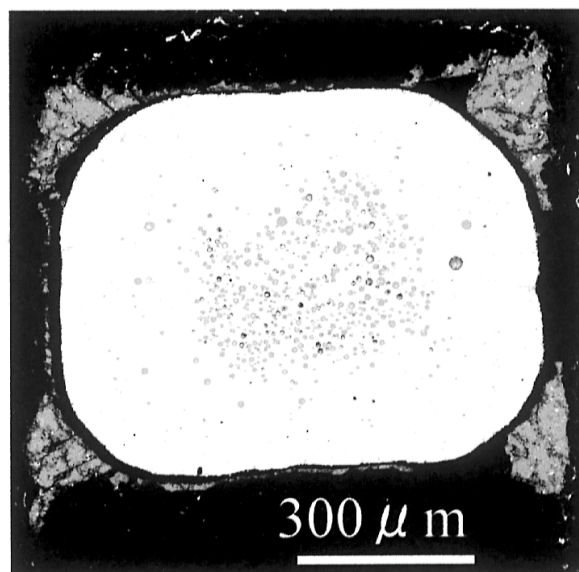


Fig. 5. 2300°C, 15GPa

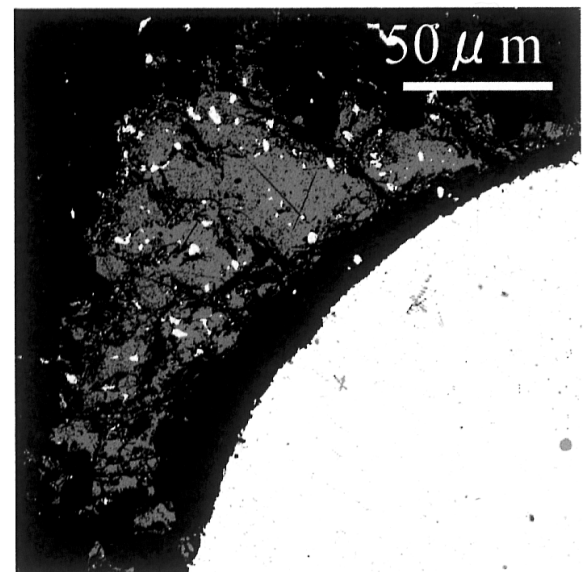


Fig. 6. enlarged Fig. 5