

## **The common nature of native iron in terrestrial rocks and meteorites: Microprobe and thermomagnetic data**

Pechersky D., Kuzina D., Nurgaliev D., Tsel'movich V.  
*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

---

### **Abstract**

© 2015, Pleiades Publishing, Ltd. The microprobe and thermomagnetic data for native iron in terrestrial rocks (xenoliths from mantle hyperbasites, Siberian traps, and oceanic basalts) are generalized and compared to the data for native iron from sediments and meteorites. It is found that the native iron particles contained in the continental and oceanic hyperbasites and basites are similar in composition, shape, and grain size. These particles are predominantly nickel-free and similar to the extraterrestrial iron from sediments and meteorites. This similarity suggests the similar sources of origin of these particles. This means that the terrestrial conditions were close to the conditions that existed at the source planets of the meteorites, e.g., the bodies from the asteroid belt which have been subsequently disintegrated, and crushed into cosmic interplanetary dust, which has entered the terrestrial sediments. This similarity originates from the homogeneity of the gasdust cloud at the early stage of the Solar System. The predominance of extraterrestrial native iron in sediments is accounted for by the fact that the interplanetary dust is mainly contributed by the material from the upper mantle of the source planets of cosmic dust.

<http://dx.doi.org/10.1134/S1069351315050109>

---