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Iron Ore Reactions and Phenomena in a Blast Furnace

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closed (15 June 2022)

Message from the Guest Editors

Blast furnaces (BF) are still the dominant process for making iron in the world. Blast furnaces are charged with iron ores in the form of pellets, sinter and/or lump ore and metallurgical coke in separate layers from the top of the furnace. While descending, the ferrous burden materials encounter different kinds of reactions and phenomena inside the blast furnace, including reduction reactions, softening and melting, disintegration as well as pellet swelling and cracking. Regular articles based on laboratory and pilot scale experimens as well as review articles of this topic are invited to this Special Issue. Topics that will be included in this Special Issue include—but are not limited to—as follows:

- The reduction of BF ferrous burden materials by CO and H_2;
- Softening and melting of BF ferrous burden materials;
- Swelling and cracking of pellets;
- Disintegration of BF ferrous burden materials;
- Especially, phase transformations during the above-mentioned reactions/phenomena.

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Message from the Editor-in-Chief

Minerals welcomes submissions that report basic and applied research in mineralogy. Research areas of traditional interest are mineral deposits, mining, mineral processing and environmental mineralogy. The journal footprint also includes novel uses of elemental and isotopic analyses of minerals for petrology, geochronology and thermochronology, thermobarometry, ore genesis and sedimentary provenance. Contributions are encouraged in emerging research areas such as applications of quantitative mineralogy to the oil and gas, manufacturing, forensic science, climate change, geohazard and health sectors.

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