Special Issue

Application of Fluxes in Submerged Arc Welding

Message from the Guest Editor

Flux design for submerged arc welding (SAW) applications varies according to the specific application, such as fluxes for cladding and hardfacing applications vs. fluxes for the joining of metals in fabrication. Flux chemistry and mineralogy are manipulated to target specific physio-chemical properties in molten flux (slag). Fluxes may contain alloys and metals to be transferred into a weld metal, and fluxes may be formulated to microalloy the weld metal via element transfer from slag to the weld metal. Productivity gains are determined via an increased weld energy input, the application of multiple weld wires, the use of metal/alloy powders in a tubular wire format (metal-cored and flux-cored weld wires) and the application of different feeding arrangements for weld wires, flux and metal/alloy powders. Flux formulations are also tailored to function effectively under process conditions of high SAW productivity. In this Special Issue, we welcome contributions on flux design aspects linked to the SAW process. The focus is on the link between flux formulations and the resultant effects of these flux design aspects on the SAW process.

Guest Editor

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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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