

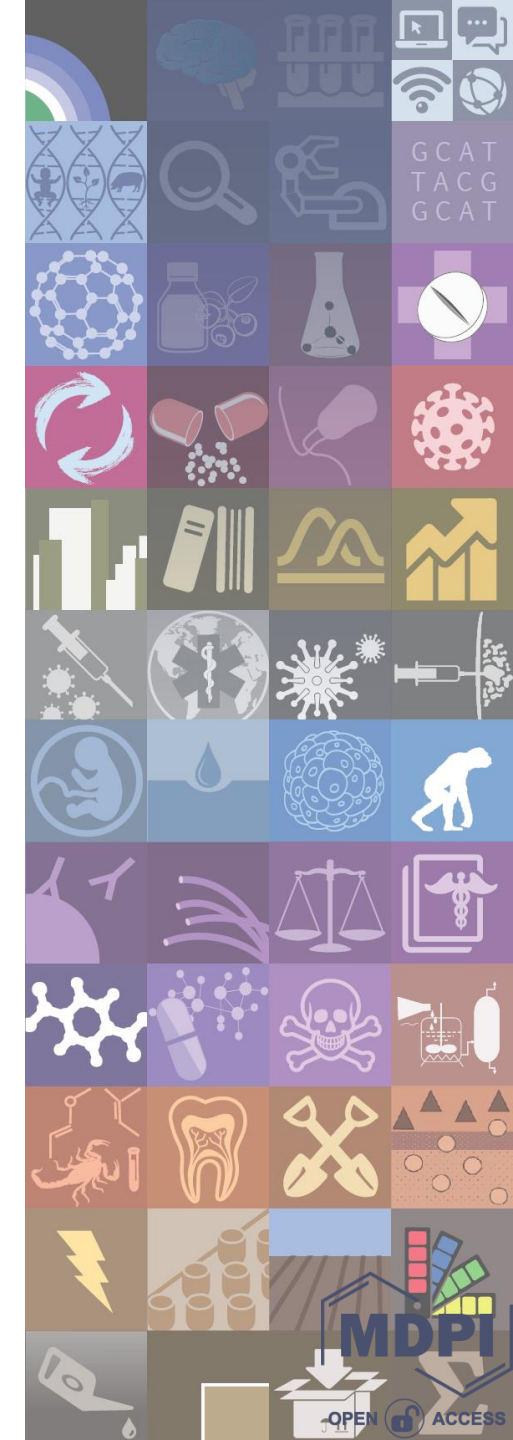


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Topics Covered:

- metallurgy
- alloys
- precious metals
- transition metals
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- base metals (include iron, nickel, lead and zinc)
- noble metals (include tantalum, gold, platinum, silver and rhodium)
- metalloids
- semi-metals
- metallicity
- rare metals
- ferrous and non-ferrous metals



Special Issue

Utilization of Industrial By-products—Recovery of Rare Earth Elements

Guest Editors:

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Message from the Guest Editors

Dear Colleagues,

An industrial by-product is a production residue from an industrial process that is not a waste, with a minor net realizable value (NRV) when compared with the main products. However, a by-product can be useful and marketable. Rare Earth Elements (REEs), including Sc, Y, and the lanthanides, are elements of high techno-economical interest because of their use in high-tech materials and modern applications. The European Commission considers the REEs as the most critical raw materials group, due to their highest supply risk and their economic importance. As economically exploitable minerals containing REEs are very scarce, the available stockpiles have decreased and the recovery of REEs from their deposits is difficult due to the coexistence of radioactive elements; therefore, it is necessary to investigate the potential to recover REEs from different industrial by-products. These industrial streams contain relatively low concentrations of REEs in comparison to primary ores, but large volumes are available, and therefore they could become economically attractive secondary sources of REEs. This Special Issue aims to publish papers dealing with the recovery of REEs from different industrial-by products, such as slags produced by pyro-metallurgical metal recycling processes, bauxite residue (red mud), phosphogypsum, mine tailings, industrial wastewater, and others. The processes described have to be economically viable, environmentally friendly, and have the possibility to be scaled up.