

Preface

Rare Metal Technology 2017 is the proceedings of the symposium on rare metal extraction and processing sponsored by the Hydrometallurgy and Electrometallurgy Committee of the TMS Extraction and Processing Division. The symposium has been organized to encompass the extraction of rare metals as well as rare extraction processing techniques used in metal production and mineral processing. This is the fourth symposium since 2014, which will be held in San Diego, California.

This symposium intends to cover research and developments in the extraction and processing of less common rare metals that are not covered by other TMS symposia. These elements include antimony, bismuth, barium, beryllium, boron, calcium, chromium, gallium, germanium, hafnium, indium, manganese, molybdenum, platinum group metals, rare earth metals, rhenium, scandium, selenium, sodium, strontium, tantalum, tellurium, and tungsten. These are rare metals of low tonnage sales compared to high tonnage metals such as iron, copper, nickel, lead, tin, zinc, or light metals such as aluminum, magnesium, or titanium and electronic metalloid silicon. Rare processing includes bio-metallurgy, hydrometallurgy, and electrometallurgy, as well as extraction of values from electric arc furnace (EAF) dusts, and less common waste streams not discussed in recycling symposia. Rare high-temperature processes included microwave heating, solar-thermal reaction synthesis, molten salt electrochemical processes, cold crucible synthesis of the rare metals, and the design of extraction equipment used in these processes as well as laboratory and pilot plant studies.

This volume covers extraction and processing techniques of various platinum group metals, rare earth elements as well as other less common metals such as arsenic, indium, antimony, molybdenum, chromium, titanium, and vanadium, including electrochemical processing, aqueous processing, biological separation, and microwave heating. The symposium is organized into the following sessions: (1) Rare-Earth Elements, (2) Platinum Group Metals, and (3) Base and Rare Metals (Co, Cr, Sn, Ti, Mo and V).

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Dunlap and Patricia Warren is greatly appreciated in assembling and publishing the proceedings. We sincerely thank all the authors, speakers, and participants and look forward to continued collaboration in the advancement of science and technology in the area of rare metal extraction and processing.

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Lead Organizer

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