



Do you have business or industry news of interest to the minerals, metals, and materials community? Submit your announcement or press release to Kaitlin Calva, JOM Magazine Managing Editor, at kcalva@tms.org for consideration.

In Case You Missed It: **Business News from the Field**

Redwood Recycles Battery Materials

Carson City, Nevada, USA: Redwood Materials Inc., a startup founded by Tesla Inc. co-founder J.B. Straubel, is developing processes to recycle battery materials for reuse in new batteries and has begun recycling scrap from Panasonic coming out of Gigafactory Nevada. Redwood plans to refine its recycling process on cellphone batteries in preparation to handle electric car batteries. Straubel seeks to lower battery costs by reducing the use of raw materials and believes Redwood can reach half the price of mined materials within 10 years. The company expects to expand to 200 employees by the end of 2020.

Researchers Shape Alloy Micro-Crystals

Birmingham, U.K.: Researchers at the University of Birmingham and the University of Greenwich used high-speed x-ray imaging to record the formation of micro-crystals as alloys cool and solidify under a magnetic field, and then developed

a mathematical model to predict whether micro-crystals would form and what shape they would have. The ability to shape the growth of the micro-crystals will impact industrial-scale processes, such as the removal of iron from recycled aluminum.

In related research, a technique was invented using magnets and a temperature gradient to remove iron that makes the material brittle and limits its applications. The invention was patented by the University of Birmingham Enterprise and supported by the Midlands Innovation Commercialisation of Research Accelerator.

Ivanhoe Partners with China's CNMC in Africa

Vancouver, Canada: Ivanhoe Mines announced a strategic partnership agreement with state-owned China Nonferrous Metal Mining (CNMC) to explore opportunities in Africa and pursue the objective of becoming a leading supplier of critical materials for clean energy. The strategic partnership will provide significant opportunities for collaboration on mineral exploration, mine planning, development and acquisition of mineral projects, logistics, and smelting. Ivanhoe is developing the Kamoakakula copper project and former Kipushi Mine joint ventures in the Democratic Republic of the Congo and the Platreef joint venture in South Africa.

Steelmaker Implements Green Equipment

Salzgitter, Germany: Salzgitter Flachstahl GmbH acquired what is being called the world's most powerful, high-temperature hydrogen electrolyzer. It has a rated electrical output of 720 kW and is expected to produce at least 100 tons of green hydrogen from renewable electricity by the end of 2022. The new equipment is part of the GrInHy2.0 project, which aims to develop a carbon-neutral, hydrogen-based steelmaking process. The effort brings together Salzgitter; hydrogen electrolyzer manufacturer Sunfire; and steel industry partners Paul Wurth SA and Tenova SpA.

Kyoto University Announces First PGM-HEA

Kyoto, Japan: Kyoto University, in cooperation with multiple institutes in Japan, reported the first high-entropy alloy (HEA) to consist of all six platinum group metals, known as PGM-HEA. The researchers also showed that PGM-HEA electrochemically catalyzes ethanol oxidation reactions highly efficiently. To test its usefulness, PGM-HEA was applied to electrochemical ethanol oxidation reactions, which are used for portable power applications such as smartphones. The higher catalytic performance could provide a new strategy for higher fuel efficiency.



Chelveston, U.K.: GE Renewable Energy, in collaboration with engineering company Wykes, began development of an innovative battery energy storage system in the United Kingdom. GE Renewable Energy will deliver the 25 MW multiple hour duration energy storage systems to be integrated with Wykes' 60 MW solar photovoltaic (PV) plant at the Chelveston Renewable Energy Park. The site also has 26 MW of wind energy, with Wykes intending to use the storage to add another 60 MW of solar capacity, taking total renewable capacity to 146 MW. The site will be the first British direct-DC-coupled solar deployment where the solar and batteries share a common set of power conversion equipment. (Photo courtesy GE Renewable Energy.)