



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

Aurcana to Restart Revenue-Virginus Mine

Vancouver, Canada: Aurcana Silver Corporation plans to reopen the Revenue-Virginus Mine in Ouray, Colorado, by the spring of 2021. The site in the San Juan Mountains is home to one of the richest silver lodes in the world but has undergone several failed restarts since a fire closed its doors in 1916. In October 2020, Aurcana forecast six months to initial production and nine months to cash flow, based on a 2018 feasibility study.

Rainbow and Bosveld Partner in Rare Earths

Saint Peter Port, Guernsey: Rainbow Rare Earths is partnering with Bosveld Phosphates to co-develop the Phalaborwa rare earths project in South Africa. The asset contains about 35 million tonnes of gypsum resulting from historic phosphate hard rock mining, containing rare earth elements with an estimated average in situ grade of 0.6% total rare earth oxides. Rainbow will pay Bosveld \$750,000 in cash and share in three equal tranches over 12 months. After a pre-feasibility study, Rainbow will hold 70% of the project and Bosveld the remaining 30%.

New Material for Protecting First Responders

Cambridge, Massachusetts, USA: A research team developed a new material with the potential to greatly improve safety

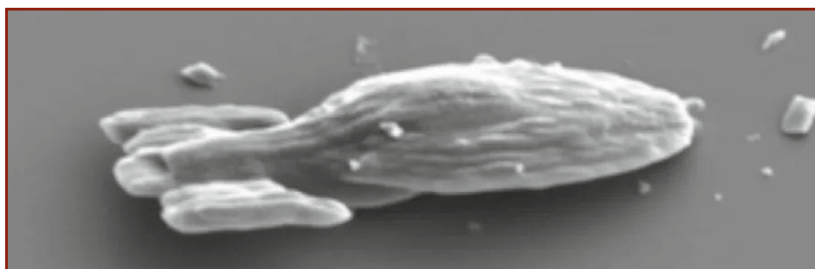
gear used by first responders and military personnel. Offering the bulletproof strength of Kevlar, the material is lightweight for mobility and has thermal protection for extreme temperatures. First author Grant M. Gonzalez, Harvard University, said the material's "long fibers could resist a mechanical impact while the pores would limit heat diffusion, thanks to a mix of order and disorder in its molecular structure and orientation." Harvard University led the research in collaboration with the U.S. Army Combat Capabilities Development Command Soldier Center and the U.S. Military Academy at West Point.

Self-healing Microstructures Strengthen Aluminum

Melbourne, Australia: Monash University researchers demonstrated improvements in the fatigue life of high-strength aluminum alloys. The alloys are important for transportation applications because their lightness improves fuel efficiency, but their fatigue properties are poor compared to steel of similar strength. After demonstrating that the poor fatigue performance was caused by weak links, called precipitate free zones, the researchers were able to make aluminum alloy microstructures that can heal the weak links while in operation, a form of self-healing. The improvement in the lifetime of high-strength aluminum alloys could be 25 times compared to current state-of-the-art alloys.

New Institute Opens on Materials Discovery

San Diego, California, USA: The Institute for Materials Discovery and Design (IMDD) opened in September 2020 at the University of California, San Diego (UCSD). The goal of the IMDD, a collaboration between UCSD's Jacobs School of Engineering and Division of Physical Sciences, is to leverage researchers' cross-disciplinary expertise to discover, design, and characterize advanced materials needed to address global challenges. This materials work has applications in energy and transportation systems; healthcare solutions; sustainability; and information technologies.



5 μ m

Leiden, The Netherlands: Physicists at Leiden University applied 3D printing technology to develop a microswimmer in the shape of the *USS Voyager*, a starship from *Star Trek*. A platinum coating on the microswimmers reacts to a hydrogen peroxide solution to propel them through the liquid. The miniature *Voyager*, measuring 15 micrometers long, is part of research to understand how shape affects the motion and interactions of microswimmers. The research could have potential applications in developing new drug delivery vehicles. (Photo courtesy of Rachel Doherty and Samia Ohajji.)