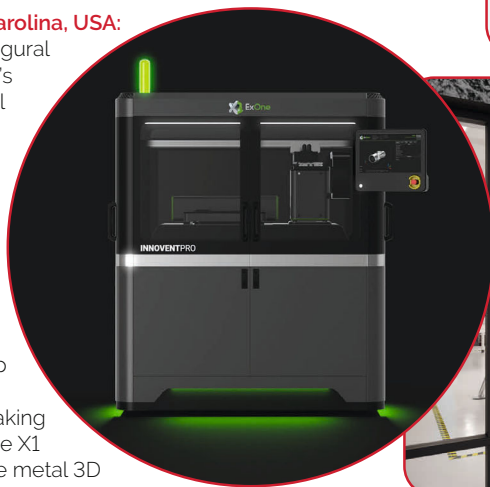


In Case You Missed It: **BUSINESS NEWS FROM THE FIELD**

Charlotte, North Carolina, USA:

Siemens is the inaugural customer of ExOne's InnoventPro™ metal 3D printer (Photo Left) and will use the 3D printer at its Charlotte Advanced Technology Collaboration Hub (CATCH) in Charlotte, North Carolina, to develop materials and processes before taking them to scale on the X1 160Pro™ extra-large metal 3D printer. (Photo Credit: ExOne)



JFE Cuts Carbon Emissions

Tokyo, Japan: JFE Steel plans to spend 1 trillion yen on low-carbon technology over the next eight years to achieve its 2030 goal of cutting carbon dioxide (CO₂) emissions by 30% versus 2013 levels. That compares with Japan's overall 2030 target to cut CO₂ emissions by 46% from 2013 levels. JFE President Yoshihisa Kitano asked the government to help ensure JFE would get a premium on the sale of lower carbon steel to justify its investments.

New Software System Predicts Viability of HEA Material Combinations

Worcester, Massachusetts, USA: The Integrated Materials & Processes Design Group (IMPD Group) at Worcester Polytechnic Institute (WPI) have developed a software package called HEA_ML that predicts mechanical properties of high-entropy alloys (HEAs) in all composition ranges, including large and complex systems. Other software offerings have generally focused on the phase stability of new HEAs. HEA_ML predicts mechanical properties in any combination, and while it demonstrates data for the most popular Al-Co-Cr-Fe-Ni system, data can be expanded to address high-order systems, including 10 to 20 elements. Once possible compositions are identified, IMPD Group researchers can provide elevated-temperature, mechanical-property predictions for insights into how the mechanical property will perform under high temperature service conditions. In the automotive, aerospace, and military industries have begun using the software.

Do you have business or industry news of interest to the minerals, metals, and materials community?

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Submit your announcement or press release to Lynne Robinson, Department Head, Marketing and Communications, at lrobinson@tms.org.



Pittsburgh, Pennsylvania, USA: The Moonshot Museum (Photo Above) opened to the public in October 2022 with a focus on career readiness for the contemporary space industry. Launching a new model for collaboration between education-focused nonprofits and industry, Moonshot Museum enables visitors to experience simulated lunar missions designed to foster interest in pursuing space-related careers, including pathways in medicine, business, law, and policy. (Photo Credit: Astrobotic)

Bradda Receives Lithium Permit

Isle of Man, UK: Bradda Head Lithium Ltd, the North American-focused lithium development group, received permission to drill at Basin East Extension (BEE) in Arizona, adjacent to Basin East where Bradda has a 305 kt lithium carbonate equivalent JORC resource. Sonic drilling, will be used, which uses significantly less water than traditional core drilling, while yielding superior core recoveries for softer deposits like clay. Drilling results from BEE are expected to feed into a revised resource estimate on the Basin Project in early 2023. This will also form part of the resource for a preliminary economic assessment (PEA), due to start in 2023.

Plug and Amazon Sign Hydrogen Agreement

Latham, New York, USA: Plug Power Inc., a provider of turnkey hydrogen solutions, signed a hydrogen supply deal with Amazon to provide liquid green hydrogen starting in 2025 to help decarbonize Amazon's operations as part of its goal to be net-zero carbon by 2040. This deal is expected to help Plug achieve its 2025 \$3 billion revenue goal. Plug seeks to build an end-to-end green hydrogen ecosystem and provide integrated hydrogen solutions for its global customers.