

Magnum Venus Products licenses ORNL co-developed additive manufacturing technologies

**Media Contact:** Jennifer Burke, 865.414.6835, burkejj@ornl.gov



The Reactive Additive Manufacturing, or RAM, machine for large-scale thermoset printing supports two technologies licensed by MVP and developed in collaboration with ORNL. Credit: Carlos Jones/ORNL, U.S. Dept. of Energy

The Department of Energy's Oak Ridge National Laboratory has licensed two additive manufacturing-related technologies that aim to streamline and ramp up production processes to Knoxville-based Magnum Venus Products, Inc., a global manufacturer of fluid movement and product solutions for industrial applications in composites and adhesives.

The first co-developed technology is a segmented build platform to increase material flow in large-scale additive manufacturing. The second is a reactive polymer fused deposition manufacturing technology that uses reactive or thermosetting polymers, such as urethanes and epoxies, which are melted and partially cross-linked prior to depositing to form a solidified object.

The licensed segmented build platform was included in the first version of the Reactive Additive Manufacturing, or RAM, machine, co-developed by MVP and ORNL in 2018. The

RAM machine, which features a gantry system tailored to the application, was developed in response to growth in 3D printing, a market demand for hyper-customization and the need for advanced manufacturing automation.

“Development of the build platform allows for the print to be removed from the print area while still attached to the print bed, increasing throughput and eliminating a number of pre- and post-processing operations previously required,” Mike Kastura, MVP senior product manager, said. “This has opened up potential for many new applications of MVP’s RAM system.”

“The RAM technology gives the ability to 3D print large-scale structures with thermoset materials,” said Vlastimil Kunc, ORNL co-inventor and project lead. “This can result in high performance parts and innovative solutions using additive manufacturing with tailored material properties.”

Co-inventors of the segmented build platform to increase material flow include Vlastimil Kunc, John Lindahl, Christopher Hershey, Mike Kastura, Mike Welch and Tim De-Luca. Co-inventors of the reactive polymer fused deposition licensed manufacturing technology include Vlastimil Kunc, Orlando Rios, Lonnie Love, Chad Duty and Alexander Johs.

Research for these technologies is conducted at the Department of Energy’s Manufacturing Demonstration Facility at ORNL, supported by the DOE Office of Energy Efficiency and Renewable Energy’s Advanced Manufacturing Office that supports early-stage research to advance innovation in U.S. manufacturing and promote American economic growth and energy security.

For ORNL licensing information, contact [www.ornl.gov/partnerships](http://www.ornl.gov/partnerships).