cost-effective route from the laboratory to the market by facilitating access and by incorporating industry-specific issues (such as manufacturing and scale-up) into the materials development process.

According to Iver Anderson, Senior Metallurgist at Ames Laboratory and a member of the LightMAT steering committee, "There are many scientists within the national labs who are eager to work on *real* applications for their materials discoveries and processing inventions—to reach the ultimate technology goal line." Anderson also points out the frustrations experienced on the industry side with engineers and technology managers often knowing about, but having difficulty accessing, the technology and expertise within the national laboratory network. "Closing this information gap and rapidly enabling effective partnerships to provide a clear path to solve industry's critical problems is the EMN mission," Anderson says.

"The EMN is a tremendous move by the DOE at removing barriers—perceived and actual—from industry to accelerate work with the national laboratories," says Yuri Hovanski, Director of LightMAT at PNNL. Hovanski characterized the access the EMN provides for industry to the national laboratories as "strategic and unprecedented" and explained how the EMN is changing the game with a real-world materials example:

> Before the EMN, if a company needed to better understand new powder streams for additive manufacturing being developed at Ames, they would have to access high speed computing from ORNL [Oak Ridge National Laboratory], predictive modeling from LANL, and simulation validation from PNNL—all with separate contracts and unique agreements. This often hindered industry from accessing the very best team possible at overcoming their challenges. Since the advent of the EMN, a single agreement with LightMAT allows companies to access all these capabilities—and many more—seamlessly across the ten partnering labs in our consortium.

While the recent establishment of the EMN means the consortia are in various stages of readiness, LightMAT and ElectroCat have both launched websites that list the capabilities housed within the network as well as relevant access details. W. Jud Ready, Deputy Director of the Institute for Materials at the Georgia Institute of Technology, works on electronic applications of nanomaterials, and noted that while he has not yet had a chance to collaborate with the EMN in his research, "one of the most useful items has simply been the cataloguing of available equipment and facilities and how to access them with an actual name, phone, email, and webpage associated with it."

Ready expects the EMN to have a positive impact on the materials community through increased "opportunities for funding, collaboration, and equipment use." And according to Hovanski, the potential for the EMN to integrate and accelerate the materials development cycle would "enable US manufacturers to deliver innovative, made-in-America products to the world market."

Jennifer A. Nekuda Malik

European cities test green energy and transport solutions
www.remourban.eu

The project Regeneration Model for Accelerating the Smart Urban Transformation (REMOURBAN), funded by the European Union (EU), will demonstrate strategies that European cities can use to reduce energy consumption, improve transport sustainability, and cut greenhouse gas emissions. The aim is to improve the quality of life in urban areas through cooperative efforts on green energy and transport solutions.

The project's approach encourages individuals and communities across Europe to work together on implementing sustainable, green solutions to meet energy and transport needs. The approach is in line with the EU's plan to develop smart cities that integrate information and communication technologies (ICTs) with sustainable energy and transport solutions.

REMOURBAN is implementing and testing a range of green energy and transport strategies in three partner cities: Valladolid (Spain), Nottingham (UK), and Tepebaşi/Eskişehir (Turkey). The project will work closely with city administrations and residents to develop these strategies, based on local needs in selected districts.

The project is targeting energy savings of 50–53% and emission reductions of 26–80%, involving between 5700 and 8100 residents depending on the participating city district. The project's work includes:

- retrofitting buildings and improving lighting and equipment to achieve energy savings;
- installing domestic and district-wide heating systems that use renewable sources integrated with smart energy monitoring and control technologies;
- deploying electric and hybrid vehicles and buses in place of conventional fuel-powered ones, along with associated charging stations and management technologies; and
- developing information and communication technologies and platforms to manage city infrastructure, smart energy grids, and traffic.

The approaches will be shared across the three test cities, and with two other project partners—Seraing (Belgium) and Miskolc (Hungary)—as a means of developing generic solutions that can be applied elsewhere across Europe.

REMOURBAN will also identify the main barriers to achieving urban sustainability goals and propose regulation adjustments that will encourage cities to switch to green energy and transport solutions, and to improve public procurement procedures. □

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