

**NIST awards USD\$7.8 million for Advanced Manufacturing Technology**  
[www.nist.gov/amo](http://www.nist.gov/amo)

The National Institute of Standards and Technology (NIST) has announced 16 awards totaling USD\$7.8 million to help accelerate the growth of advanced manufacturing in the United States. The grants will support industry-driven consortia in developing research plans and charting collaborative actions to solve high-priority technology challenges.

Called the Advanced Manufacturing Technology Consortia (AMTech), the

program supports newly funded projects spanning a variety of industries and technologies, from next-generation gas turbines and aerospace manufacturing to hybridized semiconductor and synthetic-biology devices and glass manufacturing. Thirteen of the projects will launch new consortia. All will initiate technology roadmapping activities or similar efforts intended to identify, prioritize, and align research

and development in targeted industry sectors.

This round of grants—ranging from \$413,000 to \$500,000 for a period of up to two years—has been awarded to universities and other nonprofit organizations. In addition, more than 250 businesses, trade associations, universities, and other organizations will collaborate as unfunded partners.

“The awards ... will support public-private partner collaboration that boosts advanced manufacturing, which is critical to supporting economic growth,” said US Commerce Secretary Penny Pritzker.

**EU Horizon 2020 supports new round of SMEs**  
<https://ec.europa.eu/easme/sme-instrument-beneficiaries>

Over 160 companies from 23 countries have been selected in the latest round of the European Union’s (EU) Horizon 2020 SME Instrument Phase 1, which funds small- and medium-sized enterprises (SMEs). For each project, the participants will receive €50,000 to finance feasibility studies. They can also request up to three days of business coaching.

Among the recipients are Magpie Polymers—a spin-off from the École Polytechnique, France—which recovers precious metals such as platinum, palladium, rhodium, and gold from wastewater or process water. The company received funding for its proposal for vertical integration into platinum group metals refining processes.

The United Kingdom’s C4 Carbides

Ltd. received funding for “Laser bonding of linear edged superabrasive blades,” and France’s POWERTECH SYSTEMS received support for “Pre-Commercial Production Demonstration of Very High Capacity Silicon Anode for High Performance and Low Cost Li-Ion Batteries.” Both of these are in the topical area called “Accelerating the uptake of nanotechnologies, advanced materials or advanced manufacturing and processing technologies by SMEs.” The full list of recipients is available on the Horizon 2020 website.

**Minister Pandor urges Africa to invest more resources in universities**  
[www.dst.gov.za](http://www.dst.gov.za)

Africa needs to invest more resources in universities as a commitment to genuinely contribute to economic development and poverty and disease alleviation on the continent, said the South African Minister of Science and Technology, Naledi Pandor.

Minister Pandor was speaking at an inaugural awards ceremony in Johannesburg, namely, the Department of Science and Technology/Southern African Research and Innovation Management Association (SARIMA) Excellence in Research and Innovation Management Awards to celebrate excellence in research and innovation in Southern Africa.

The Minister said that, over the past few years, there had been a notable increase in the demand for higher education in Africa, stretching institutions beyond capacity.

The majority of mobile students come from less developed countries to developed countries, while mobility within the Commonwealth countries is influenced by cost factors, increased competition in the market, and skills shortages.

She said while South Africa had benefited from this increased mobility, the country had not managed to expand the number of researchers, warning that the country was edging toward a demographic

cliff as half of the country’s professors were due to retire in the next decade.

“This is worrying because of their research output. Back in 1994, the over-50-year-old researchers only produced one in 10 credited publications. Now these over-50-year-olds produce five in 10 of our scientific papers,” said Pandor.

Pandor encouraged students from around the world to study in South Africa, and reiterated the government’s intention to step up efforts to attract postgraduate students and postdoctoral scientists to the country.

“International students, postgraduates, and researchers bring tremendous benefits to South Africa and they make an enormous contribution to the intellectual vibrancy and diversity of our educational institutions.” □

Submission Deadline—September 1, 2015



CALL FOR PAPERS

## Two-Dimensional Heterostructure Materials

Continuing a theme first published in February 2014 under the title “*Graphene and Beyond*,” this *JMR* Focus Issue centers on heterogeneously integrated atomic layers – the next frontier in two-dimensional (2D) materials research.

The isolation of graphene constituted a new paradigm in materials exploration in which atomic layer control is possible, and even though graphene is considered transformational, it is only one of hundreds of layered materials that exhibit unique properties compared to their bulk counterparts. Materials such as transition-metal dichalcogenides, silicene, phosphorene, and 2D polymers represent a growing variety of 2D materials of interest to the research community. Heterogeneous integration of conducting, semiconducting, and insulating layered materials is expected to lead to completely new and widely tunable electronic and optoelectronic properties that are different from the constituent layers. These exciting possibilities are now beginning to be realized experimentally, making this a propitious time to offer a Focus Issue on the materials science of these novel structures.

Research related to experimentally demonstrated and theoretically predicted properties, including details of the synthesis, structure, chemistry, stacking sequence, and transport manipulation of 2D heterostructures is solicited. This includes interdisciplinary topics related to the materials science, chemistry, physics, mechanics, and engineering of 2D material systems.

### The issue will have a special emphasis on:

- ◆ Modeling of heterostructures built from 2D-layered materials
- ◆ Synthesis of lateral and vertical heterostructures of 2D layered materials by chemical and physical vapor deposition methods
- ◆ Chemical modification and doping of novel 2D-layered materials and derivatives.
- ◆ Physical property (mechanical, electronic, opto-electronic, catalytic, etc.) characterization of heterostructures of 2D layered materials
- ◆ Applications (catalysis, energy storage, sensors, optoelectronic, etc.) of 2D materials and their heterostructures

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To be considered for this issue, new and previously unpublished results significant to the development of this field should be presented. The manuscripts must be submitted via the *JMR* electronic submission system by **September 1, 2015**. Manuscripts submitted after this deadline will not be considered for the issue due to time constraints on the review process. **Submission instructions may be found at [www.mrs.org/jmr-instructions](http://www.mrs.org/jmr-instructions)**. Please select “Focus issue: *Two-Dimensional Heterostructure Materials*” as the manuscript type. **Note our manuscript submission minimum length of 6000 words**. All manuscripts will be reviewed in a normal but expedited fashion. Papers submitted by the deadline and subsequently accepted will be published in the Focus Issue. Other manuscripts that are acceptable but cannot be included in the issue will be scheduled for publication in a subsequent issue of *JMR*.

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