

research and technology on sorting technologies is growing all the time,” said Dow. Much of that research has been supported by the public sector, through such organizations as WRAP. “Fortunately,” Dow added, “we have got them to stimulate the private sector.” This has made it possible for companies to explore areas that people think would be too risky for them to invest in on their own.

One idea that Dow described is the development of new materials “with something added to the bottle when it is being manufactured.” As he put it, the idea is “just throwing another additive in, what we call a marker.” That marker would enable an optical sorter to detect what type and color it is and to put it in the right recovery stream. “Fantastic stuff,” Dow enthused.

Gover suggested an even more sophisticated way of marking material that could ease waste sorting, especially if the idea is to produce “food-grade materials” so that recycled polymers can go back into food packaging. If a material has not previously been used to contain food, then it cannot go back into food packaging.

“If it has been used for detergent then it cannot go back into food grade,” Gover explained. This throws a heavy burden on the sorting process. It has to be an automated process to make it economical. “Where we have been making progress there is to actually make diffraction gratings that can be molded into the plastic and then can actually give a signal that can tell the sorters that this was food



Mixed plastics—can materials research deliver a new era for recycling? © WRAP 2013.

grade before and therefore can go into food-grade polypropylene,” Gover says. But not all food-grade material will go back into food packaging, so it has to lose its “marker” during processing. “You want something that disappears when it is recycled. A diffraction grating can be built into this material and when it is melted it has gone again.”

He added that this is not something he would have expected to have seen in packaging and waste a few years ago. “It is really showing how we are using science to help us,” he said.

One topic that barely arose during POST’s meeting was the role of the European Union (EU). Cliffe did point out that there are European standards for recycled materials that are destined to

come into contact with food, and “these are slowly taking over from national legislation.” There was, though, no mention of the “EU Waste Framework Directive,” under which the European Commission may introduce a range of measures such as laying down end-of-waste criteria for specified waste streams.

POST points out that the EU’s directive “is the main policy instrument covering recycling and diversion from landfill.” There is as yet no sign that this would be one of the measures that the UK government will want to include in its plans to renegotiate the country’s role in the EU.

Michael Kenward

US releases report for a manufacturing innovation network

http://manufacturing.gov/docs/NNMI_prelim_design.pdf

The Obama Administration’s National Science and Technology Council (NSTC) has released a report that describes an approach to implementing and managing a National Network for Manufacturing Innovation (NNMI)—a proposed national network of up to 15 manufacturing institutes around the country that would serve as regional hubs of innovation. The NNMI was announced

by President Obama last March and is designed to accelerate the development and adoption of cutting-edge manufacturing technologies.

This report, *National Network for Manufacturing Innovation: A Preliminary Design*, includes the framework for the competitive process and the criteria for selecting the Institutes of Manufacturing Innovation (IMI). The report rec-

ommends that each of the IMIs be led by US nonprofit organizations and have diverse funding sources and an independent Board of Directors composed predominantly of industry representatives. IMI partners would include private industry, academic and technical training organizations, government agencies, and unions among others. Federal matching funds for IMIs would be disbursed over a five-to-seven-year period, after which the institutes would be self-sustaining. □



Materials for Breakthrough Innovations

From Aldrich® Materials Science

Materials Fabrication

- Catalyst Precursors and Supports; Monomers; Deposition Precursors for PVD, CVD, Sputtering; Metals and Alloys

Electronics

- Printed Electronics Inks & Pastes; Materials for OPV, OFET, OLED; Nanodispersions; CNTs & Graphene

Biomedical

- Multifunctional Regenerative Therapy Materials: PEGs, Biodegradable & Natural Polymers; Targeted Drug Delivery: Block copolymers, Dendrimers



aldrich.com/matsci

ALDRICH
Materials Science

MRS Booth 425



Subscribe (free) to:
Material Matters™
aldrich.com/mm

©2013 Sigma-Aldrich Co. LLC. All rights reserved. SIGMA, SAFC, SIGMA-ALDRICH, ALDRICH, and SUPELCO are trademarks of Sigma-Aldrich Co. LLC, registered in the US and other countries. FLUKA is a trademark of Sigma-Aldrich GmbH, registered in the US and other countries. Sigma brand products are sold through Sigma-Aldrich, Inc. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see product information on the Sigma-Aldrich website at www.sigmaaldrich.com and/or on the reverse side of the invoice or packing slip.

80297
1033