**Fore! Glass golf clubs are playing through**

What do some high-end golf clubs and a living room window have in common? The answer is glass, but the clubs use metallic glass, which can be bent considerably and spring back to original form. An international team of scientists hopes their discoveries will lead to glass that is both stronger and more ductile.

“We used an experimental technique called nanoindentation to repeatedly sample the initial formation of shear bands,” says Seth Imhoff at Los Alamos National Laboratory, N.M. “Essentially it uses a tiny needle to push on the surface of a sample in a very controlled way. Even though the force is small, the tip of the needle concentrates stress in one small region until a single shear band is generated in order to relieve some stress.”

By repeating this process many times, scientists sample many local atomic arrangements and their specific critical stress levels. This evidence challenges the current assumption of only a single type of initiation site, or STZ (shear transformation zone). Identification of multiple types of STZs could lead to new opportunities for controlling the strength and ductility of bulk metallic glasses and, of course, more durable high-performance golf clubs. www.lanl.gov.

**Manufacturing a solution to planet-clogging plastics**

Researchers at Harvard’s Wyss Institute, Boston, developed a method to carry out large-scale manufacturing of everyday objects—from cell phones to food containers and toys—using a fully degradable bioplastic isolated from shrimp shells. The objects exhibit many of the same properties as those created with synthetic plastics, without the environmental threat. It also trumps most bioplastics on the market today in posing no threat to trees or competition with the food supply.

The bioplastic was developed from chitosan, a form of chitin, a long-chain polysaccharide responsible for the hardy shells of shrimps and other crustaceans, armor-like insect cuticles, tough fungal cell walls, and flexible butterfly wings. The majority of available chitin in the world comes from discarded shrimp shells, and is either thrown away or used in fertilizers, cosmetics, or dietary supplements.

The Wyss team, led by Javier Fernandez and Don Ingber, developed a new way to process the material so that it can be
used to fabricate large, 3D objects with complex shapes via traditional casting or injection molding techniques. Moreover, the chitosan bioplastic breaks down within about two weeks when returned to the environment, and releases rich nutrients that efficiently support plant growth. For more information: Javier Fernandez, javier.fernandez@wyss.harvard.edu, www.wyss.harvard.edu.

**Platinum chromium coronary stent system**

Boston Scientific, Natick, Mass., received CE Mark approval for its next-generation bare metal stent, the REBEL platinum chromium coronary stent system, designed to treat coronary artery disease. The system offers physicians the same platform as the Promus PREMIER drug-eluting stent, but without the Everolimus drug. The customized platinum chromium alloy stent features high visibility, low recoil, exceptional radial strength, and fracture resistance, while improving axial strength and deliverability. The enhanced low-profile delivery system includes a shorter, more visible tip, unique dual-layer balloon, and a Bi-Segment inner lumen catheter, which provides an appropriate level of pushability and flexibility. The stent system is available on a Monorail platform in 48 sizes, ranging in diameter from 2.25-4.50 mm and lengths of 8-32 mm. www.bostonscientific.com.


Kaiser Aluminum Corp., Foothill Ranch, Calif., and The Boeing Co., Seattle, formed a closed-loop scrap recycling program that is expected to involve approximately 22 million lb of aluminum in 2014-2015. The program is the largest aluminum recycling program to date and captures 7XXX and 2XXX aluminum alloy recyclables generated at multiple Boeing facilities during production of commercial aircraft. Scrap alloys will be remelted and used to produce aerospace sheet and plate at Kaiser’s Trentwood facility in Spokane, Wash. www.kaiseraluminum.com, www.boeing.com.