

# top products of the year

The editors highlight some of the top offerings from the industry's component and systems suppliers.

## High-friction coatings

EKagrip nickel-diamond coatings from **ESK Ceramics**, a **Ceradyne** company, are designed for use at joints in power-train, transmission, suspension, and drive applications. Consisting of an electroless nickel matrix in which specified quantities of diamond particles of defined size are co-deposited, these coatings can be applied either to the joint components directly or to thin foils or shims for installation in the joint. EKagrip friction coatings can transmit up to three times as much load as conventional systems with no need to modify the joint design. Unaffected by typical in-engine environments, the coatings can be reused.



## Transmission technology

**CVT Corp.** offers a mid- to high-power toroidal traction continuously variable transmission (CVT) for the industrial and off- and on-highway vehicle industries. While the 275-kg (605-lb), 350-N·m (258-lb-ft) system is currently available in 50, 75, and 100 kW (67, 100, and 134 hp) and being used in the company's variable-speed generator, the technology is adaptable for various vehicle platforms. Benefits of the CVT include an average of 25% fuel savings, longer engine life, and greenhouse-gas reduction. The technology features a total electronic management system that responds in real time based on continually changing parameters to ensure maximum vehicle performance. The CVT provides efficiency, high-torque handling, low parts count, reliability, and serviceability.



## Composite bushings

Two new lines of composite products from **Polygon** offer off-highway OEMs new design options for pneumatic and low-pressure hydraulic applications as well as traditional pivot locations. The PolyLube



and PolySlide line of self-lubricated composite bushings and liner-less composite cylinders offer manufacturers new performance capabilities for their products. Polygon says the advantages of using composite as opposed to traditional material such as metal include less mass, more strength, improved performance, and a reduced overall cost of ownership.

## Emissions reduction

**Eaton** offers an exhaust aftertreatment system that uses a fuel-dosing system, mixing elements, fuel reformer, lean NOx trap (LNT), diesel particulate filter (DPF), and selective catalytic reduction (SCR) catalysts arranged in series to meet upcoming global off-highway emissions regulations. The system uses a fuel reformer to generate



hydrogen and carbon monoxide. These reductants are used to regenerate and desulfate the LNT catalyst. NOx emissions are reduced using the combination of the LNT and SCR catalysts. During LNT regeneration, ammonia is intentionally released from the LNT and stored on the downstream SCR catalyst to further reduce NOx that passed through the LNT catalyst.

## Uniform surface

**REM Chemical's** Isotropic Superfinishing (ISF) is a non-invasive chemical surface finishing process that uniformly refines asperities found in final drive and transmission gears in off-highway equipment. By removing these microscopic peaks, the process leaves a uniform surface that reduces friction and increases lubrication capability. The ISF process reduces cost of ownership by decreasing downtime and increasing time between maintenance, according to the company, and is currently used in military applications. Benefits include improved gear durability, reduced gear surface micro pitting, cooler operating temperatures, and decreased vibration and noise.

