# 3M Scientists Stanley B. Collins and Scott R. Culler Receive American Chemical Society's Team Innovation Award for 2008

Two 3M division scientists, Dr. Stanley B. Collins and Dr. Scott R. Culler, are the recipients of the American Chemical Society's (ACS) Team Innovation Award for 2008, the ACS has announced. They will be formally honored at a dinner in April during the ACS 235th National Meeting & Exposition in New Orleans.

The award has been given annually since 1994 "to highlight the value and importance of technical teams and teamwork ... by recognizing a multi-disciplinary team for successfully moving an innovative idea to a product now in commercial use," according to the Society.

Collins, who retired in 2002, and Culler headed the 3M™ Trizact™ Structured Abrasive development team, which virtually reinvented sandpaper by incorporating 3M's proprietary microreplication technology. Their work led to thousands of new applications for specialized industrial abrasives and further improved the environmental impact of the manufacturing process.

Under Collins and Culler, the Trizact™ structured abrasive team consisted of approximately 25 researchers from nine different 3M laboratories. Collins was recruited from 3M's Optical Technology Center, and Culler from 3M's ESPE Dental Division.

"Collins and Culler headed one of the most extraordinary teams in 3M's 100-year-plus history, generating enormous enthusiasm and excitement throughout the company," says Dr. Stefan A. Babirad, 3M technical director for Abrasives Systems. "The revolutionary engineered family of products they created has had a tremendous impact on manufacturers' abrasive grinding and finishing processes, from electronics and surgical instruments to auto body finishes and golf clubs."

"At the same time, the Trizact™ structured abrasive team reduced to near zero environmental emissions during the newly-developed manufacturing processes of the abrasive constructions, eliminating both the use of ozone-depleting solvents and the production of potentially harmful byproducts," Babirad adds. "As a result, Trizact™ structured abrasives require no special EPA permits or environmental equipment, such as thermal oxidizers typically used in the manufacture of coated abrasives."

Collins, who holds a Ph.D. in chemical engineering from Oregon State University, is an expert in small particle and microreplication technologies. He retired as division scientist after a 35-year career in various 3M laboratories, and now resides in White Bear Lake, Minnesota.

Culler, currently a division scientist, is in his 23rd year with 3M, and is credited with inventing 3M™ Scotchprime™ Ceramic Primer for the repair of porcelain dental crowns and bridges. He holds a Ph.D. in macromolecular science from Case Western Reserve University, and resides in Burnsville, Minnesota.

Trizact™ structured abrasives, covered by 43 issued patents, are precisely shaped engineered composites bonded to a backing in an exact pattern. These composites can take the form of almost any three-dimensional geometric shape, including pyramids, hemispheres and cubes and can be coated onto a variety of backings, including polymeric films, cloth and foam.

The specific shape and dimension of the abrasive composites provides enhanced grinding performance. Its height wears away uniformly during grinding, exposing a continuous supply of fresh, sharp abrasive mineral

that provides pristine finishes for delicate components or applications where conventional abrasives are inadequate.

Trizact™ structured abrasives can be modified to meet customers' needs in cut, finish and performance. Compatible with hand tools and robotic equipment, they can be used on numerous substrates such as solid surface composites, plastics, acrylic, glass, rubber and metals, providing longer life, higher cut rates, lower grinding energies, less operator fatigue and lower work-piece temperatures.

Other key advantages include consistent superior finishes, diminished subsurface damage, fewer rejects and rework, and high reproducibility of abrasive belt-to-belt and lot-to-lot operations.

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