



Simply the best

ECN reveals the top ten entries in this year's Innovation Awards – and there are a few surprises

THE SHORTLIST for the ICIS Publications Innovation Awards 2005, sponsored by Dow Corning, is finally revealed this week. Ten companies have caught the judges' eyes and will be going through into the final round. Each has a chance of picking up an award across the four categories in this year's competition.

As with last year's awards, entries have come from around the world, with companies in Canada, France, Germany, Italy, the Netherlands, New Zealand, Saudi Arabia, the UK and the US putting up their innovations for assessment. Innovation these days is global, involving both large multinationals and innovative small companies.

This year, we have widened the scope of the awards, adding categories for best innovation from small and medium size enterprises (SMEs) and the innovation that most benefits the environment to the two categories of 2004, namely, best process innovation and best product innovation of the year. This

THE JUDGES

ICIS assembled a panel of eminent judges for the awards

- Professor Anthony Ryan, ICI professor of physical chemistry and EPSRC senior media fellow, University of Sheffield, UK
- Dr Gregg Zank, chief technology officer, Dow Corning
- Tommy Mann, managing partner of Accenture's global chemical industry practice
- Colin Humphris, research and science executive director, Cefic
- Dr Weon Lee, vice president, R&D Center, Samsung Total

In terms of the awards judging, the panel's decision will be final and no correspondence will be entered into over the opinion of the judges.

has stimulated more SMEs to enter this year, but the largest number of entries was generated by the environment category, suggesting that regulatory and environmental concerns are driving plenty of innovation.

The judges (see above) had an interesting and challenging task selecting the shortlisted companies and will meet in late August to select the winner in each category. The winners will be announced in the 10 Octo-

ber issue of ICIS Publication's three weekly magazines, *Asian Chemical News*, *Chemical Market Reporter* and *European Chemical News*. This issue will feature interviews with the winners and the judges' comments on why their innovations proved worthy of their award.

» For more details of the awards, visit www.icis.com/awards and www.icis.com/tv

BEST INNOVATION BY AN SME

Title: Hiltap *Twister LQC* quick coupling device for hoses and loading arms
Entered by: Mike Freeman of Hiltap Fittings (Canada)

Safer and more environmentally responsible transfer of fluids is claimed for the *Twister LQC* hose coupling, which has been designed as a replacement for the conventional 'cam and groove' coupling. It operates with just a quarter turn on and off, and is designed to lock shut if there is pressure in the line, thus eliminating the risk of injuries on accidental release of pressure.

Title: Better process for synthesis of inhalation anaesthetic desflurane
Entered by: Dr Joel Swinson for Halocarbon Products Corp (US)

The South Carolina-based SME has developed a method of preparing desflurane by passing a mixture of isoflurane and hydrogen fluoride over a fixed bed of specially prepared catalysts in a

continuous process. The new process has advantages over the conventional batch process involving antimony halide catalysts in that there are fewer by-products, making purification easier, and that unreacted reagents can be recycled.

Title: *Cage-Safe* mdPE film for improving transport of goods through an automated picking operation
Entered by: Robert Croft of Initial Packaging Solutions (UK)

Cage-Safe was developed to solve the problem of a particular customer who was experiencing product loss as a result of transporting products through an automated picking operation. It is produced as a plain or printed sheet in varying film gauges and widths, and has a glue line at one end to keep the band in place around the cage. The material used – an mdPE blend – was selected for its environmental benefits and is 40% lighter than standard industry counterparts.

BEST PRODUCT INNOVATION

Title: Ekho thermoset adhesive using no solvents or volatile organic chemicals
Entered by: Jenn Downs for Westech Aerosol Corp (US)

Westech has developed a fully reactive liquid polyurethane adhesive that is 100% solvent-free and contains no VOCs. It is dispensed from a pressurised container that does not need to be heated or mixed, and in which the propellant is separated from the adhesive by a low surface energy plastic bag. The moisture-curing product is filled into the can with nitrogen purge to prevent premature hardening.

Title: Utilisation of trisilylamine (TSA) for semiconductor applications
Entered by: Jean-Marc Girard for Air Liquide Electronics (France)

As the dimensions of semiconductor devices shrink, a method for depositing silicon nitride thin films by chemical vapour deposition at

BEST PROCESS INNOVATION

Title: Reprocessing of used, toxic motor oils to make virgin-quality motor base stocks

Entered by: Fabio Dalla Giovanna for Viscolube (Italy) and Axens (France)

Viscolube and Axens have jointly developed a process, known as *Revivoil*, which uses flash distillation, thermal deasphalting and deep hydrofinishing to remove metals and carry out denitrification, desulphurisation and saturation of aromatics in used motor oils. The result is a usable API Group II base oil. The process was commercialised last year in an 80 000 tonne/year recycling unit in Pieve Fissiraga, Italy.

Title: Industrial production of Vitamin K3 by new ecological process based on CeTech technology

Entered by: Behzad Mahdavi for SAM Electron Technologies (Canada)

In collaboration with Laboratoires des Technologies de l'énergie, SAM has developed the use of cerium as an oxidising agent in the production of vitamin K3, replacing hexavalent chromium, which creates problems with chromium sulphate byproduct. CeTech is a continuous rather than batch process and the cerium is recycled permanently in an electrochemical cell. The only byproduct is hydrogen.

lower temperatures is required. The conventional process, reacting dichlorosilane (DCS) and ammonia, requires temperatures of 700°C, but Air Liquide's discovery and development of trisilylamine brings the temperature requirements down to 600°C and lower.

Title: Xfast stir-in pigments for aqueous decorative paints

Entered by: Dr Rudolf Muller-Mall for BASF Powder pigments for aqueous decorative paints have to be incorporated into the paint by a process of mixing, shot-milling and a standardisation process. But BASF has developed a new pigment formulation in the form of fast-dissolving dustless power granules that can be incorporated merely by stirring in. The pigment can thus be added by the paintmaker or at the point of sale. *Xfast* consists of 80% pigment and 20% nonionic polymer additive system and consists of hollow spherules.

DOW CORNING – INSPIRED BY CHANGE

Rapid technological change, globalisation and fierce competition have undoubtedly complicated companies' efforts to bring new, added-value products and services to market. At the same time, customers are becoming more sophisticated. They are more demanding and empowered, based on open access to information on the Internet. They require customised approaches, innovative technologies and advanced benefits that will provide a competitive advantage.

Even in this fast-evolving landscape, a simple truth remains – successful companies are those that continually innovate. Innovative companies look outside in, focusing not on what products they can create, but on what customers and markets need. They identify emerging trends, then find new uses for existing materials or invent entirely new ones.

They nurture innovation at all levels and apply it to everything they do, from corporate strategy to how employees work across geographies and time zones and to the relationships they create with business partners and customers. They embrace innovative practices that allow them to compete at the global level, yet remain sensitive and adaptable to the needs and opportunities in local markets.

This approach is what separates innovation-rich companies from traditional companies and is at the heart of the success in the chemical industry. It is a lesson we know well. Like many technology companies, Dow Corning has been good at perfecting science at the molecular level. But now, instead of just making the molecule better, we are going beyond that by making our full offering better to help our customers deliver on their own brand promises, as defined by the market and their customer.

Like you, we are inspired by change and welcome the opportunity to think differently about our business challenges and to constantly seek new ways to benefit our customers. For all companies who share our embrace of innovation, we, in partnership with ICIS, salute you.



Stephanie Burns,
president and chief
executive officer,
Dow Corning

DOW CORNING

*We help you
invent the future.™*

INNOVATION WITH GREATEST ENVIRONMENTAL IMPACT

Title: Envirox fuel-borne catalyst for emissions reduction from diesel engines

Entered by: Sonia Bouzid for Oxonica (UK)

Envirox is a cerium oxide-based fuel additive that modifies the combustion profile so that fuel is burned more efficiently and productively and with less hydrocarbon and particulate emissions. It thus increases kilometres travelled/gallon of diesel by 5-10%, and makes the engine environmentally cleaner. No engine modifications are needed in order to use the *Envirox* diesel and it has no impact on lubricant performance. It is used at just 5ppm in the fuel.

Title: Industrial cryogenic machining system for elimination of metal cutting fluids

Entered by: Ranajit Ghosh for Air Products and Chemicals (US)

Air Products has developed an industrially robust and cost-competitive cryogenic machin-

ing system that uses liquid nitrogen to cool the workpiece rather than conventional cutting fluids. These, it argues, present a significant health hazard to workers. The nitrogen used is a controlled two-phase mixture of liquid micro-droplets and gas, that maximises heat transfer coefficient.

Title: Solids Distillation System (SDS) – a recycling technology for solid industrial waste
Entered by: Ken Carle for Pollution Control Industries (US)

SDS is designed to recover valuable hydrocarbons from organic solid waste. Recovery takes place in a large, indirectly heated rotating cylindrical chamber, with the unique feature that the waste is not combusted but merely baked in an enclosed anaerobic atmosphere. Liquid hydrocarbons are recovered and can be directly reused or processed into various products after fractionation distilling.