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FEATURE STORY

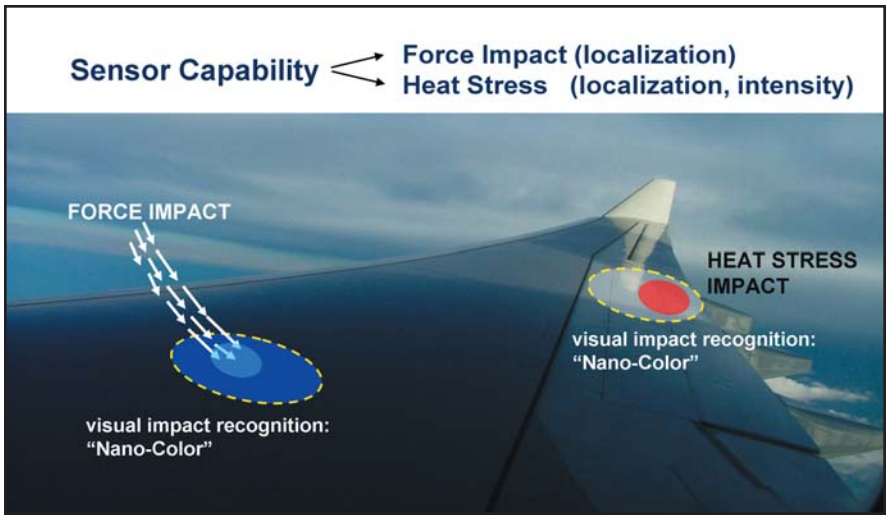
Entrepreneurial Spotlight: Topasol

Some time ago, in response to the global quest for green/renewable energy saving sources, a very small, University of Kentucky start-up company from UK's Center for Applied Energy Research initiated its emergence onto the global arena by landing a significant R&D contract with the U.S. Navy. The company: Topasol, LLC; its field: nanotechnology -- specifically the development of multifunctional coatings for the aerospace, automotive and solar industries.

" 'Topasol' is an acronym for 'top solutions'," the company's CEO, Dr. Uschi Graham explained. "Our smart coating systems, when applied to the surface of an object, provide a special mechanism which recognizes external force and allows the detection of impact to a structure made of composite components. Lightweight composites are being utilized in aerospace structures in place of metal, which will lead to substantial fuel savings, but lighter composites have vulnerabilities. Thermal impact or force impact such as a bird strike can cause damage to the composite without showing any visual indication at the surface. What Topasol's nanocoatings are created to do is to function as a heat or force impact sensor which covers the entire surface of the plane and has the ability for visual impact recognition through color change. With Topasol's technology in place, an engineer can detect any potential composite damage quickly and can immediately evaluate the possible impact on the plane (see schematic)."

According to Dr. Graham, the high-profile R&D contract was awarded because Topasol's nanocoatings fit the "specs" the Navy is trying to develop for its new, lighter weight, more fuel efficient airplanes. "We might have been a bit naïve to respond to a Navy call for sensor coatings development...but we knew our technology was what the Navy was looking for ... so we sent in our proposal, and they awarded us the contract," she noted. As is often said - the rest is history.

Today, the company is located on UK's Coldstream Research Campus, and includes an international R&D team including four PhDs. The Principal Research Scientist, Dr. Rajesh Khatri, develops multifunctional nanocoatings with a recent Phase-II project from NSF. The team also collaborates with a large coatings manufacturer on the development of specialty coatings, which have applications for solar cells, LCD displays, and automotive and aerospace top coats. Topasol's progress was further advanced by the Matching Funds Program from the Kentucky Department of Commercialization and Innovation (DCI).



Like others profiled in this series, the future of Topasol looks very promising. According to Dr. Graham, "what we've created here, both with UK and independently, has worldwide significance and impact: the role of nanotechnology and nanocoatings is expanding dramatically; we are committed to not only staying ahead of the curve research-wise, but also, applied-usage wise. As our planet undergoes a metamorphosis into a more 'green focused environment' the emphasis on lighter/more fuel efficient entities will become widespread. With our portfolio of proven applications as well as those we have in the 'queue', Topasol is positioned for even broader based successes in the future."

Topasol is definitely a company to watch. Just make certain that when you do so, your understanding on nanotechnology is up to speed!

By The Numbers:

In 2009, Commerce Lexington's Economic Development Division responded to calls from the following:

New Business: **61 new prospects** interested in finding a new location or expanding operations.
Existing Clients & Local Entrepreneurial Companies:
45 companies with potential expansions in Lexington.
Client Visits: **17**.
Existing Business Visits: **135**.