



Interview – Alexium International Group



Nanotimes spoke with John Almond, Director of Business Development Europe of **Alexium International Group**, about his company, products and future developments.



Alexium International Group (“Alexium”) is an international company listed on the Australian and Frankfurt Securities Exchanges (**ASX: AJX / FSE: E7T.F**).

The company is based in Perth, Western Australia, and Greer, South Carolina. Alexium’s patented **RST Reactive Surface Treatment-technology** is a protective treatment that can be applied to apparel and other textiles to provide multifunctional properties such as chemical and biological protection, flame retardancy, water proofing and oil repellence. This technology enables the modification of surface properties of a wide range of materials, and single or multiple functions can be applied simultaneously.

Upholstery and furnishing fabrics

- Flame retardant
- Water & stain repellence
- Meets European test standards
- Can be used to treat a wider range of fabrics
- Cost effective as multiple functions applied simultaneously



Plus, the cooperation with partners brings Alexium in the position to supply them. According to John “the military is quite keen on how we can use the technology to improve following uniforms.”

In accordance to that, Alexium has recently signed a Memorandum of Understanding (MoU) with **Bruck Textiles** to partner in the Australian market. In addition, the company is working with **SSM Industries** in Tennessee, a leading supplier of flame retardant apparel, under a license option agreement.

Alexium continues to be actively involved in US Department of Defence tenders in the area of specialty protective apparel and recently partnered with **ITG** in a bid to supply the outer shell fabrics for the Uniform Integrated Protection Ensemble program, a lightweight chemical/biological protection suit for the US Department of Defence.

Furthermore, at the end of April 2011, Alexium has teamed with **Tennier Industries, Inc.** of Tennessee, USA, and **Stedfast Inc.** of Quebec, Canada, to submit a US\$129million bid to the US Department of Defense (DoD) to supply proprietary PANTHER Tactical Chemical Biological Protection Suits under the requirements of the Uniform Integrated Protection Ensemble Increment 1 (UIPE I1) program. The PANTHER Suit is designed to provide protection from Chem Bio warfare agents and to include continued protection after exposure to petroleum, oils, lubricants, and other environmental contaminants.

John Almond refers to the **benefits of Alexium’s technology**, which are impressive indeed. It can be used on a wide range of **surfaces and substrates**, creates a very **stable graft and efficient molecu-**



lar alignment, and enables the grafting of **multiple functions simultaneously**. It uses standard commercially available components and chemicals.

John Almond says: “A lot of people come in contact with fuels, e.g. tank commanders, pilots, mechanics, etc. This is an enormous range of opportunities for various products. The chemical and biological suits in the military need to be replaced in the next years. So, potentially [there is] a very large revenue opportunity for us.”

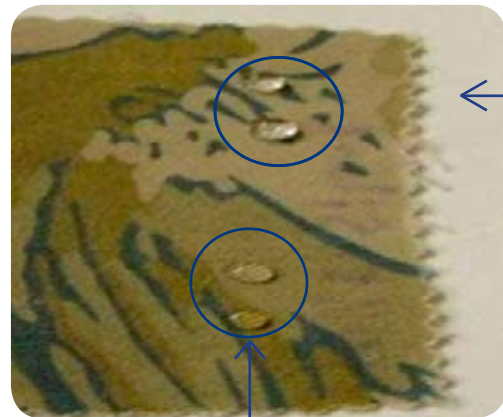
John continues to say that the technology of Alexium is driven by unique multi-functionality, adaptability



↑
Untreated 50:50
Cotton Nylon

↑
Treated 50:50
Cotton Nylon

Untreated military uniform on the left,
Alexium flame retardant uniform on the right
© Alexium



Alcohol

Water

Water and alcohol 'floating' on the surface of Alexium
treated textile. © Alexium



Production process, © Alexium

The RST process is fast, inexpensive and uses standard 'off-the-shelf' chemicals, and it can be used in conjunction with many other existing manufacturing processes. John Almond stresses that originally the technology was developed for chemical and bio-

logical suits, initially developed by US Department of Defense (DoD). By developing the technology the focus is/was on the cooperation with external partners in order to "apply this technology to give new functions to other types of military apparel."



Defence orders initial focus

- Chemical, Biological, Radiological and Nuclear (CBRN) suits and accessories
- Collective Protective Systems (tents, etc)
- Paint and coatings ongoing opportunity

Non-defence applications

- First responder (police, fire)
- CBRN suits also required
- Paint and coatings
- Oil filters
- Textiles



and durability, ease of application, and lower carbon footprint. He adds that one can talk of a “green technology” because

- the method involves low energy single pass treatment of 5 to 10 seconds,
- it is a non-thermal process with low power consumption,
- the chemical use is lower, and
- the waste water quantities are low.

John explains that overall they are looking at the material to then apply additional functionalities. “Regarding textile, we can do this very quickly,” he adds. It is all about finding the respective cost effective scala-

ble process needed for various textiles, glass, paints, etc. He refers to the **cashmere industry** (e.g. coats, jackets, suits), which is globally a very big market.

According to John, Alexium is currently in discussions with one of the largest retailers of Cashmere fabric. The objective is to apply the RST technology to the finished Cashmere to provide exceptional repellence. This is currently being tested, but Alexium is confident to eventually come up with a cost effective scalable process.

<http://www.alexiuminternational.com>

