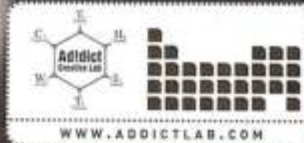


CREATIVE LAB SINCE 1997 - TALENT ACCELERATORS

AD!DICT

INSPIRATION BOOK - MAYJUNJULAUG 2007 # 27



#27. THE NANO RESEARCH

Material Sense is a dynamic project organisation linking designers, researchers, and cutting edge companies. By collaboration in exploring the world of materials and linking expertise, a new materiality in products can be created.

Founded in 2002 by designer and materials expert Simone de Waart, the independent platform aims to inspire designers, researchers, students and entrepreneurs to reach for new materials insights and innovative products. Material Sense is firmly connected to education and exchange knowledge at the start of the materials and design process.

Annually a presentation takes place based on an actual theme related to materials and innovative product development. The highlighted theme gives insight in ongoing actual movements in materials development, aims to inspire, presents possibilities and provoke innovations.

By related workshops, lectures, in house training and advisory for companies, Material Sense actively involve people in the process of materials selection, exploration, research, development and application.

Material Sense shows "sensorial" properties of materials in every sense of the word and emphasize the importance of the meaning of materials within the design process. The name stands for the common sense of using specific materials to optimize the quality of products, for products that appeal to the senses and the sensory qualities of materials.

The selection here is compiled especially for Addicts' NANO tech theme. Published materials are connected to the international travelling exhibitions of Material Sense, like Rematerialize!





Nanosphere® finishing technology is based on the self-cleaning principle of the lotus plant and is nearly a perfect copy of nature. Water, stains and other substances such as ketchup, honey, oil, red wine or blood simply run off the nano-surface. Textiles with a Nanosphere® Surface finish need to be washed less frequently and at lower temperatures. This leads to savings in consumption of energy, detergents and water.

nano material:

Material Sense

d3o technology



D3O SHEET MATERIAL
(MESH 4MM & 6MM, CONTOUR 10MM)
AND D3O BASE MATERIAL

D3O TECHNOLOGY

d3o is a specially engineered material made with intelligent molecules. They flow with body movement, but on shock they lock together to absorb impact energy. d3o is used as flexible protection incorporated into apparel and accessories.

The molecules flow past each other at low rates of movement with the natural movement of the body, but when subjected to an impact that requires the molecules to move very quickly, they instantaneously lock together by linking to form a protective barrier.



PROTOTYPE SOFT HAT
CONTAINING D3O TECHNOLOGY
AND COMPONENTS



RACER GLOVE WITH D30

The bi-density racer knuckle is very soft and flexible but, through the integration of d30 technology, any shock to the area is quickly absorbed. d30 has also been incorporated into all key impact areas on the glove in the back of the hand, cuff and base of the palm to provide all over hand protection.



NANO GEL

Nanogel is a unique form of highly porous silica. The characteristics of this material – such as high surface area and large pore volume – set it apart from common silica products. It is known as the lightest weight and best insulating solid in the world. It was originally developed for the aerospace industry and currently also used in coats and as insulation for buildings.



nano materials

Okalux

Okagel

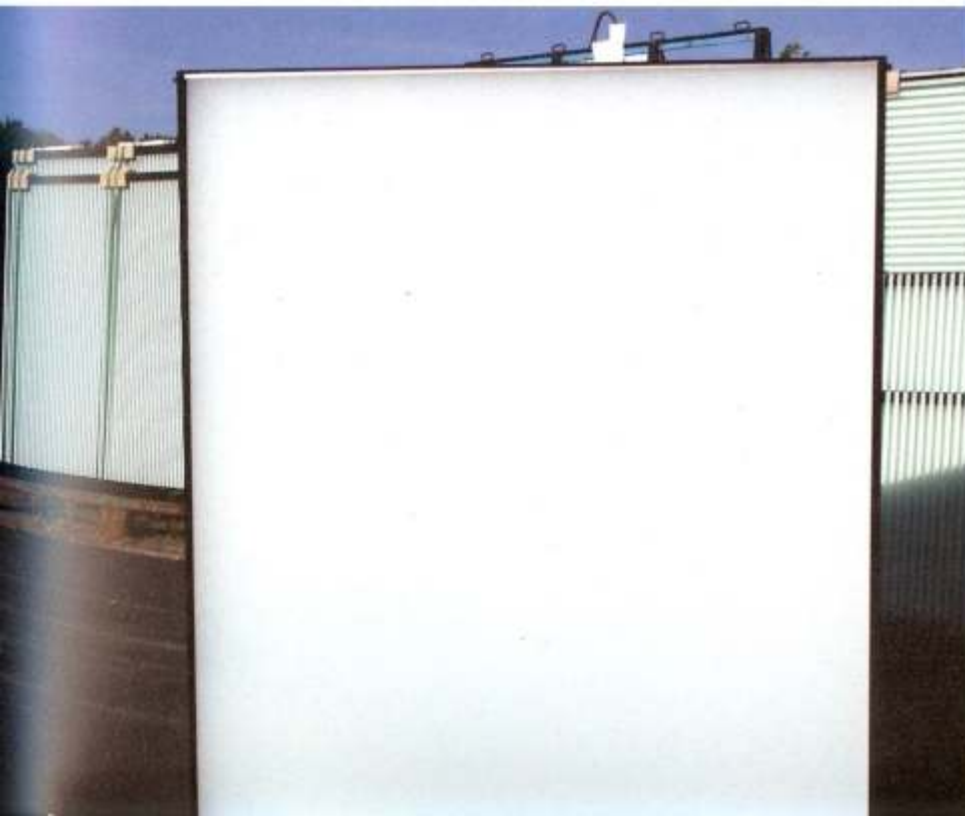


OKAGEL

The translucent facade element OKAGEL of OKALUX is a new class of IGUs, filled with Nanogel. This system is able to fulfil various different demands like highly efficient thermal insulation, light transmission or shading factor at the same time. OKAGEL Light Diffusing Nanogel Insulating Glass offers a heat insulation quality so far unknown.

The translucent nanoporous granulate in the cavity results in

- Best possible even light distribution into the room, independent of changing irradiation conditions together with glare protection
- project-specific light transmission and total solar transmittance
- excellent heat insulation
- outstanding sound attenuation
- UV control according to requirements
- appealing appearance of insulating glass in daylight or artificial light
- effect of depth when viewed from inside and outside







'A HUNT FOR HIGH-TECH'

In a world...where nature and science emerged, where technology breathes and where living without is impossible. This futuristic world is the inspiration for a collection of imitation fur, a collection for the fashion industry.

The 'future fur' shows that it is more interesting to imitate an imaginary world... and is based on biomimetics of animal skins.

nano materials

Speedo®

Fastkin™



SPEEDO®

Fastskin(TM) is the most technically advanced swimwear ever made. This unique fabric mimics a sharkskin with dermal denticles - tiny hydrofoils with V-shaped ridges that decrease drag and turbulence around the

body. Muscle compression components reduce muscle vibration. Seaming improves muscle coordination. Waist to ankle styling. Drawstring waist. Fabric: 74% polyester/26% Lycra® spandex

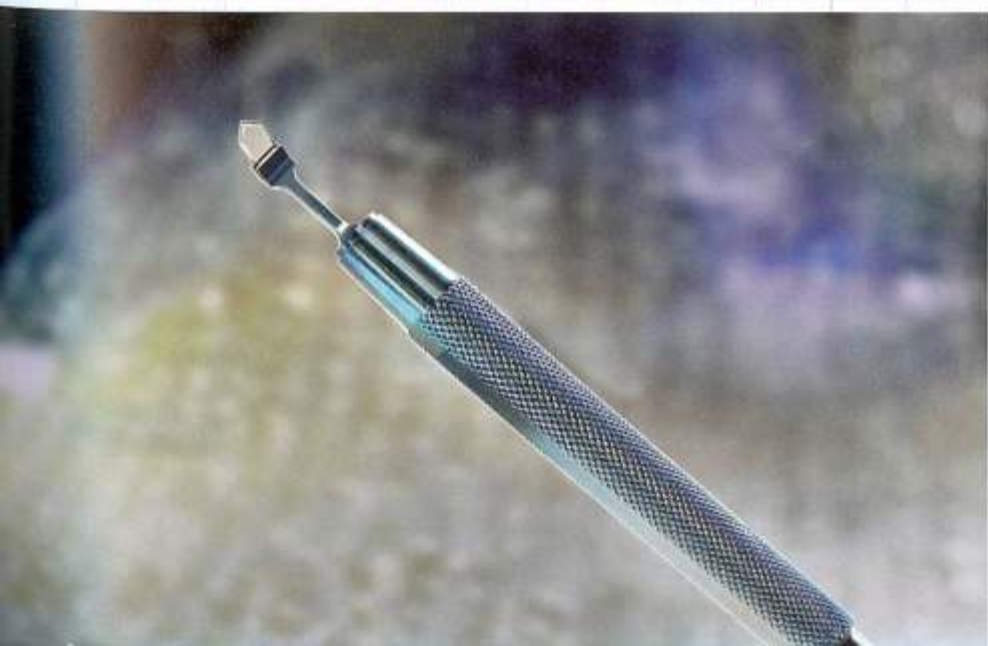
Element Six BV

Synthetic Diamond



DIAMOND SCALPEL

Diamond scalpel for cosmetic surgery, with a super sharp blade made of synthetic diamond mounted in a titanium handle. The diamond blade gives the surgeon the highest quality cut; wounds heal better and faster. Diamond knives can be used for hundreds of procedures without losing their sharpness.



DIAMOND KNIFE

The diamond knife for ophthalmic surgery is mainly used for cataract surgery, with a super sharp blade made out of synthetic diamond mounted in a titanium handle. The diamond blade gives the surgeon the highest precision and the cleanest cut. The handle has a special connection for the washing machine for easy and safe cleaning (luer lock).

nano materials

Schott AG Advanced Materials

Color Effect Glass



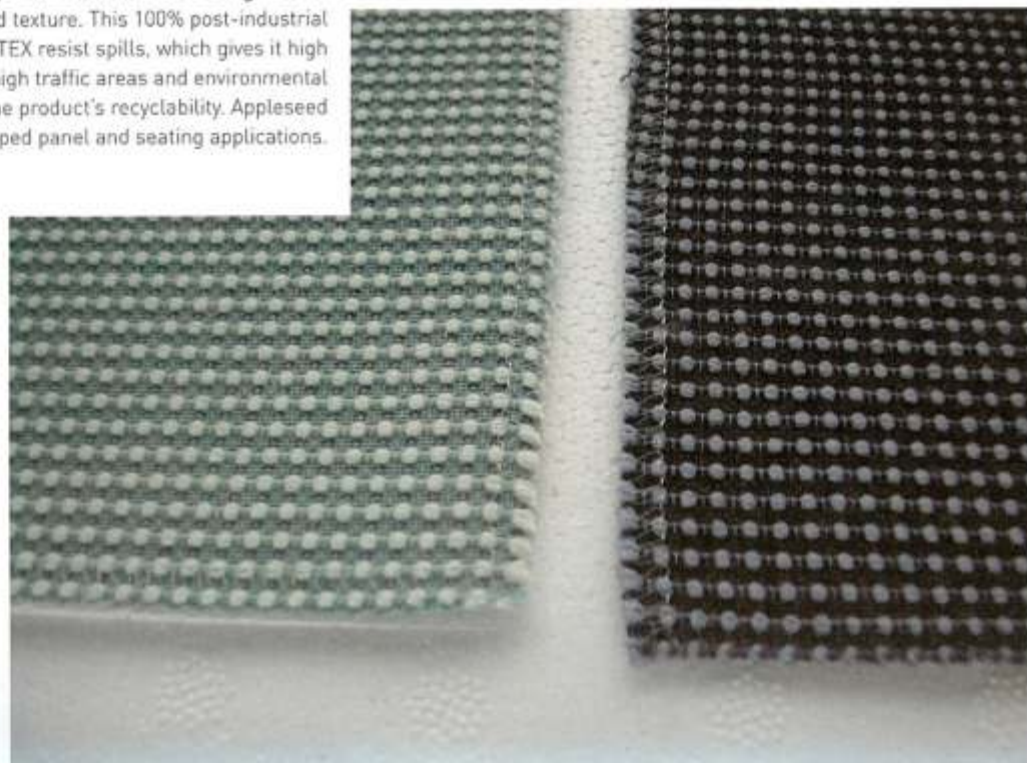
COLOR EFFECT GLASS

This coated glass is produced using the so-called SOL-GEL dipping process and consists of optical interference layers that are responsible for achieving the desired colourful effects. The colours range from blue to gold and can be applied in buildings. The predominantly oxidic layers are hard, resist scratches and offer high chemical resistance.



Follow closely on the heels of Zeftron Contex Solution-dyed nylons and eco-intelligent polyesters. The manufacturing process of these materials turns PET from soda bottles and x-ray film into fiber, which is then made into yarn.

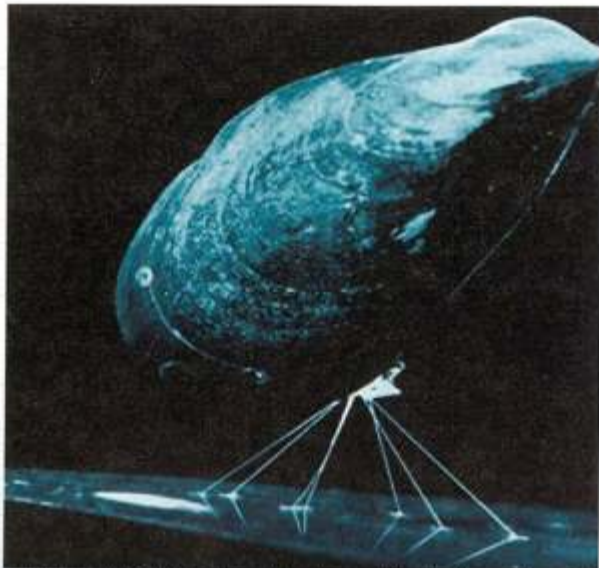
Appleseed, upholstery is a piece dyed material that uses a high sheen accent yarn for visual depth and texture. This 100% post-industrial recycled polyester has NANO-TEX resist spills, which gives it high performance characteristics for high traffic areas and environmental qualities that won't interfere with the product's recyclability. Appleseed is ideal for both wrapped panel and seating applications.

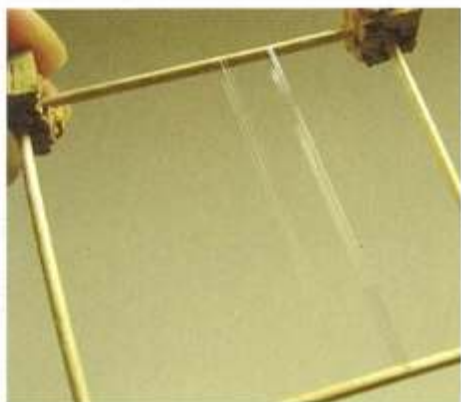




MUSSEL GLUE

It is almost impossible to make glue that will work under water. The blue mussel is able to steady itself under water by attaching itself to a surface by using its own mussel glue. Because the glue maintains its strength in a wet and salty environment, which resembles the human body, the mussel glue is suitable for medical purposes. TU Delft has been trying to develop a synthetic protein that resembles mussel glue protein for several years now. Important applications could be in gluing fractures and injured intestines.





the superior toughness of the fibres will be used in applications such as bullet proof vests, ropes, parachutes, or as a medical support for healing complicated injuries.

Grado Zero Espace in collaboration with the University of California has created the first spider-web fabric. For years, textile research has attempted to integrate the DNA of a particular spider species, the *Nephila Clavipes*, into other organisms, in order to obtain organic material with the performance features of a spider web: it looks like silk, is elastic as nylon and thirty time stronger than Kevlar.

DRAGLINE SILK

Dragline silk combines great extensibility with tensile strength. As such, its toughness is comparable to these of high-performance synthetic fibres like aramid fibre.

The University of Ghent is one of the laboratories researching for spider silk. Imitation synthetically will be possible to be expected within coming years. When succeed,

