

By Gerd Winter

The Nano in art

As anyone who has experienced the emotional barriers of visitors from abroad passing the Vegemite hurdle knows, it's not just about understanding that it's safe and contains B vitamins. It is repeated experience with it that tempers the unease.

This may also hold true for how new technologies are absorbed into society's consciousness.

Kristin Alford, director of the communication consultancy Bridge8, believes that engaging the public with new technologies, not just talking about it but facilitating experiences with it, is an important step in closing the gap between scientific enthusiasm and public mistrust. In the case of nanotechnology, Bridge8 is working together with Nanotechnology Victoria Ltd (Nanovic) on a series of activities to familiarise the public with new developments. One important focus is the arts.

Nano and art is a complex relationship, though. Nanomaterials can be used as tools that are part of an artistic expression and, very much reflecting the nature of the technology, often are a contributing part of a process or product. Targeting young people in particular, Bridge8 and Nanovic are involved with artists who are interested in experimenting with new materials. They are going to provide, for example, electroluminescent strips, fluorescing textiles, and infra-red sensitive paint for an upcoming graffiti masterclass presented by Adelaide based Carclew Youth Arts, the Australian Network for Art and Technology (ANAT), and the Adelaide Festival of Arts. The US artists involved are from the 'Graffiti Research Lab' and though not 'nanoartists' per se, Alford appreciates their openness to the use of new technology in creating art. In the process they become role models for engaging with new tools. The benefit for Bridge8 results in having a contact zone where people can engage with the technology used. "We will not leave them entirely ignorant of the technology", says Alford, and experiences with similar projects in the past have been positive. At a reSkin wearable technology masterclass held by ANAT in Feb 2007, participants were keenly interested in where the material came from, how it was made and what it did.

However, these experiments are not what Alford would define as 'nanoart': "Nanoart is about using nano-science principles to create

Leah Heiss: This 'Carrying Wellness Vessel' is a necklace that carries mesoporous iron oxide to remove arsenic from water. Designed for people in transit in countries such as Bangladesh, India and the US.

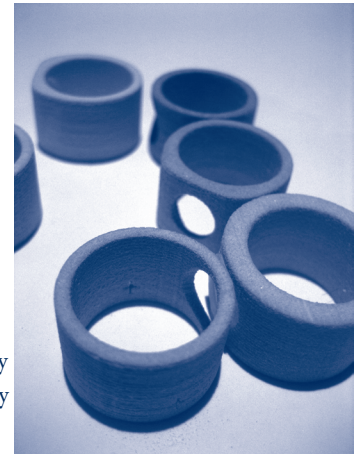


something expressed in an artistic way, and where the technology is intrinsic to the art and not just a side product of it." To illustrate, she refers to the nanoart created by the Victorian Artist-in-Residence, Leah Heiss. A collaboration between Nanovic, Arts Innovation Victoria and ANAT, the program has enabled Heiss to experiment with jewellery design based on technology. One example are patch rings (see pic below) for 12-18 year old girls suffering from illnesses such as diabetes. These rings house transdermal patches which, when loaded with medically relevant substances such as insulin, could replace the need for injections. "We had some success in talking to people about these patches, and they do

understand it. But the minute you show them Leah's brightly coloured and unusual rings and explain how you could wear a ring rather than injecting yourself with a needle four times a day, people want to know more..." describes Alford. The art behind the application is important to arouse interest and personal engagement with the technology.

Heiss says that her 'nanoart' has had positive responses from the public and from scientists. Her projects are largely based on humanising nanotechnologies which directly address

Leah Heiss: These 'Patch Rings' are to house transdermal patches to deliver medically relevant substances such as insulin, avoiding the need for daily injections. The rings make the wearing of patches acceptable and even desirable for teenage girls



the gap between technology and public perception. "Scientists are generally very busy developing technologies and don't necessarily have the time to consider the emotional impact of their creations or ways to improve their user accessibility," she says. "I am interested in augmenting the value of these technologies through artistic practice to challenge their social and emotional potential. The humanising of therapeutic technologies allows people to engage with them more directly, on an emotional level, and thus potentially demystify the technologies behind them."

But could arts be used as a marketing tool to lull the public into uncritical comfort? Alford says that Bridge8 and Nanovic do believe nanotechnology should be implemented, but not at the expense of safety or critical engagement. "You do not get public engagement," she says, "when you are not engaging with both the risks and the benefits."

Other forms of nanoart may involve the interpretation or explanation of nanotechnology by artists (see Murray Robertson 'Nanotechnology' on p. 5), or art that is created in the process of scientific commercialisation or research. As Alford says, nanoscience and its processes are inherently fascinating. "If you view something on a small scale there are images you don't see anywhere else."

There are more serious art endeavours which utilise nanotools as a means to create entirely novel artistic expressions. Alford refers to a recent project at the UCLA that used atomic force microscopy to measure the vibrations of a butterfly leaving its cocoon; these vibrations were then represented in a soundscape.

According to Alford, there is a desire by governments and scientists that the public understands nanotechnology sufficiently to make more informed decisions. She believes art is a good way of enabling the necessary conversation process. "Do we know how many people engage? No we don't. But we do know that when we talk to people about the art-science collaboration, they are really interested."



Mark Seggie (Resin Design, Victoria): Utility fog