

## MATERIAL WITNESS

## Casting problems

"It's time we got away from the idea that unless an artist makes every last bit of his work himself, it's not art." This was the exasperated assertion of one participant in a recent gathering of artists, scientists, engineers and designers at London's Tate Modern art gallery\*. An artist herself, the speaker claimed that she did not want her creativity to be impeded by the need for technical knowledge about the materials she uses.

One can sympathize with that point of view. Whereas it is all very well to point to the intimate relationship between the medieval metalsmith or painter and his materials, later artists would not have been able truly to understand their materials without considerable scientific training.

The advent of coal-tar and other synthetic organic colorants, for example, as well as new synthetic inorganics such as copper aceto-arsenite (Emerald Green), made unfair demands on the chemical knowledge of the painters using them. So they relied increasingly on technical experts (colourmen) both for access to and information about

their materials. The introduction of synthetic polymer resins like acrylics as paint media added to this distancing of artist from material.

But the comment at the Tate event betrayed the fact that what was once an inevitability, which artists tried to alleviate by consultation with specialists, has sometimes now given rise to indifference to, even contempt for, the question of what one should make one's art from.

That was evident in the way Mark Rothko once claimed that he simply bought his paint from Woolworths, not caring what was in it. (Some of Rothko's work has paid a heavy price for that lack of curiosity.) There was a sense of this blithe attitude to materials also in the account at the Tate by Mike Smith of his fabrication studio's struggles to meet the requirements of British artist Rachael Whitread for her sculpture *Monument* in 2001.

Whitread, one of the most inventive of young British contemporary artists, told Smith that she wanted to make a cast in 'water-clear' polyurethane of the huge plinth on which her commissioned work would

stand. The problem was that polyurethane is poisonous, expensive and unstable against photodegradation — and worst of all, it shrinks as it cures. For that reason, no one had previously cast it at such a literally monumental scale, and Smith's initial attempts to find a supplier were treated as hoax calls once he explained what the 11 tons of resin were for. But he persevered, accommodating the predicted shrinkage by creating an aluminium mould that was systematically too large, controlled by a hydraulic system that altered the dimensions gradually as the resin slowly cured.

It was little short of miraculous that the final sculpture emerged, uncracked and undistorted, 18 months later. Smith appeared to relish the challenge; others might wonder whether the artist's choice of material would have benefited from a little more technical input.

\**Engineering Art* Tate Modern, London, 15 April 2005.

Philip Ball



## News and Views contributions

The News and Views section is where new advances in materials science, reported in published papers or at meetings, are communicated to a broad audience. Many News and Views pieces are linked to Articles and Letters that appear in *Nature Materials*, but can focus on important papers that are published elsewhere. Unsolicited contributions will not normally be considered, although we welcome advance warning about forthcoming papers of exceptional significance. As a general guideline, News and Views pieces are about 800–900 words, with one or two display items (figures, boxes or tables). They should make clear the advance (the 'news') and communicate a sense of excitement, yet provide a critical evaluation of the work in the context of the rest of the field. We encourage personal views, criticisms and predictions, but authors should not refer to their own work, except in passing.

Detailed guidelines are available on request from [materials@nature.com](mailto:materials@nature.com) and on the web site for *Nature Materials* (<http://www.nature.com/naturematerials>).

