



Playing With Light - The Gum Bi-chromate Process

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In 1839 the Scotsman Mungo Ponton discovered that paper coated with a solution of potassium bi-chromate, when exposed to light, hardened the size on the paper. By placing objects on top of the paper and exposing to light, he was able to make a latent image of the objects when he washed the paper in water. This was the birth of the photographic process known as gum bi-chromate. It was further developed by Alphonse Louis Poitevin, who added pigments to the mixture of gum and bi-chromate yielding a fuller tonal range.

My encounter with gum prints was through the exquisite photographs of the Photo-Secessionists, Alfred Stieglitz and Edward Steichen, but I had never heard of the process used on ceramic surfaces until a chance encounter whilst on holiday, where I saw memorial photographs on small porcelain plaques in a French graveyard. As a photographer and ceramicist I realised that these 'memento mori' were not ceramic enamel decals and after some initial research found that the images were made using the gum bi-chromate process.

I had for some time been interested in putting my photographic images onto ceramics, and had some work included in Paul Scott's book *Ceramics and Print* published in 1994 by A&C Black. This work had used the photographic emulsion 'Liquid Light', but although I liked the resulting work, the photographs were not permanent and, therefore, purely decorative in ceramic terms. I was looking for a more permanent solution and had used ceramic printing techniques such as decals, and photocopy transfers but had been unhappy with the results. It was not until 2007 that I was awarded a research and development grant from Arts Council England, and this support enabled me to explore the possibilities of using the gum bi-chromate process with ceramics. I feel quite honoured that I have been able to reclaim this wonderful process that was almost lost.

To explain the process, as I have modified it, it is best to think of the bisque tile as a substrate, much like paper to which a mixture of potassium dichromate, gum and ceramic pigments or oxides are applied. After allowing the tile to dry, the surface is exposed to light through a negative and where light falls on the surface the mixture is hardened and where no light falls the mixture remains soluble. This happens in varying degrees and when the tile is washed in water, some of the mixture will wash away to reveal a latent tonal image. This process allows me to fire the tile without a glaze or refire the tile with glaze (Figures 1 and 2). It also allows me to use the full spectrum of firing ranges and different clays.

As a photographer and ceramicist, I have been able to bring together two distinct art practices and have been able to make permanent photographic images that will stand the test of time. This was demonstrated recently when I was chosen to undertake a public commission for the new health centre in Hyson Green, Nottingham. I worked with local residents and groups to make new photographic images of the local area and health centre, and used these with images of the construction of the building taken by staff. These were placed with archival photographs from the Health Authority and historic images of the area, to make two large tiled panels, which now hang in the entrance atrium of the new health centre. Each panel has 40 different images each, and it has been wonderful to see local people engage with the work as they recognise places and people (Figure 3).



Fig. 1 - Unglazed photographic tile



Fig. 2 - Glazed photographic tile

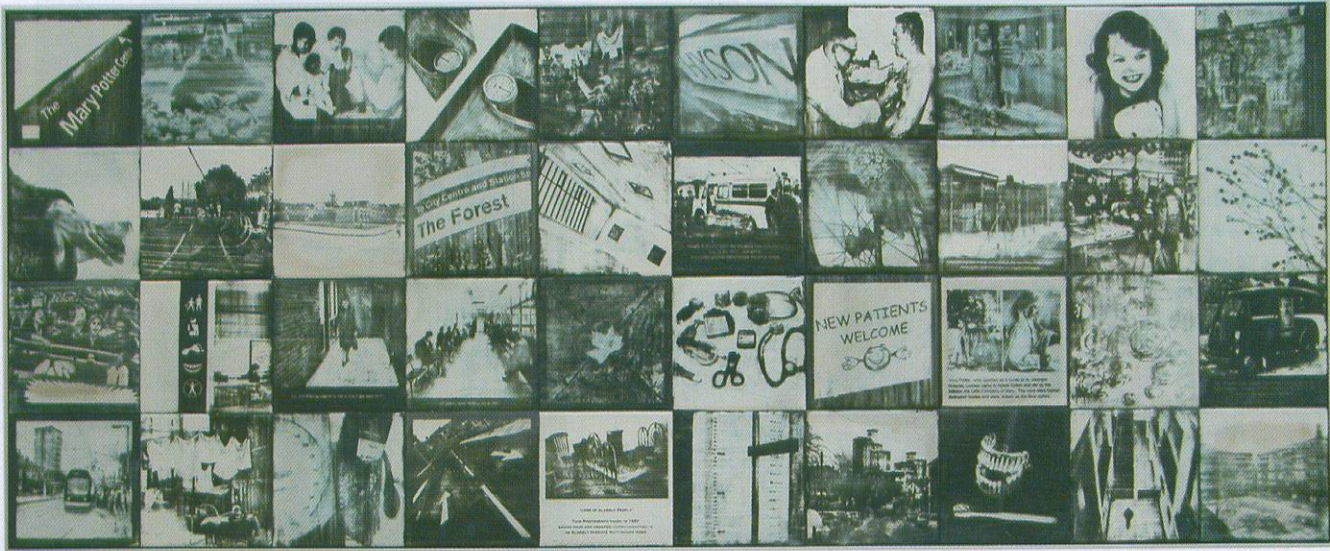


Fig. 3 - Tiled panel made from new and archival photographic images

I am a member of Design Factory, which supports designer-makers in the East Midlands. It has been a wonderful and rewarding experience giving me exhibiting and selling opportunities. All current exhibitions and shows are on the website (www.fotoceramica.co.uk). I am very proud to be a new member of TACS and be able to contribute to the great tradition of tile making.