**Water-based ceramic transfer printing: a new on-glaze Screenprint system – Demonstration from IMPACT conference 1999**

Kevin Petrie, Bristol UWE

**Equipment**  
Standard Screenprint facilities i.e. beds, screens, direct photo-polymer emulsion, squeegees etc.

**Materials and suppliers**  
Water based Screenprint ceramic transfer medium available from:  
John Purcell Paper  
15 Rumsey Road  
London SW9 0TR  
Tel 0171 737 5199

UWE ceramic transfer paper - available from John Purcell Paper  
Powdered on-glaze ceramic enamels  
Mild alkaline solution e.g. ‘Mr Muscle’ kitchen cleaner.

**Brief description**  
Ceramic transfer printing is one of the primary methods of decorating ceramics in the industry. It has also been used as a means of individual reactive expression by artists. Until now the only available system required the use of noxious solvents which were inherent in the materials used. In recent years solvent-based printing has become less viable due to Health, Safety and Environmental legislation which has forced industry, artschools, and individuals to reappraise its use.

The Centre for Fine Print Research, Bristol UWE, has developed and patented a water-based ceramic transfer printing system which substantially reduces solvent use. The new process is easier to use than the solvent-based because all screens and equipment can be cleaned with water rather than solvent. Production times are also greatly reduced as the water-based ceramic ink dries in minutes rather than hours.
**Step by step guide**

1. Prepare artwork and screens as for standard Screenprint.

2. Thoroughly mix the powdered ceramic enamel with the printing medium in a ratio of approximately 70:30 enamel to medium. The ration can vary according to the colour of enamel used. With experience a ‘printable’ consistency can be judged by eye. The ink dries quickly, so commence printing immediately.

3. Spray ‘Mr Muscle’ onto the screen and dry off with tissue paper. ‘Mr Muscle’ is a mild alkaline which helps to prevent the drying of the ink in the screen. It is also useful for the cleaning of the screens and equipment.

4. Print the ink as normal onto the shiny side of the UWE ceramic transfer paper. If the ink dries in the screen clean down with ‘Mr Muscle’. The next colours can be printed as soon as the previous is touch dry.

5. To apply the transfer to the glazed ware, cut around the image leaving a border of about 4mm. Wet the back of the transfer with warm water. After about one minute the transfer can be removed from the backing paper and applied to the ware. The wetting of the ware will aid the positioning of the transfer. Smooth the transfer onto the ware with a rubber kidney making sure all the air bubbles are removed.

6. Once dry the ware can be fired to 750-800 degrees centigrade.

**Frequently asked questions**

*Are the fired transfers dishwasher proof?*

Yes. Tests in the Faculty of Applied Sciences, Bristol UWE, have shown that the water-based transfers have the same resistance as solvent-based.

*Can you print colour photographic imagery?*

Yes. Four colour CMYK sets are available in ceramic enamels. However, they are very expensive. The Magenta contains gold and costs in excess of £200 per Kilo!