



A Picture Prints a Thousand Words

Diamond Dispersions are experts in transforming pigment powders into liquid dispersions for ink manufacturers. The high performance, ultrafine pigment dispersions are designed specifically for inkjet applications, both aqueous and solvent based. Their broad range of performance products provides ink manufacturers with the opportunity to create high value, high performance inks. Diamond Dispersions deliver reliability and stability, qualities that all good ink manufacturers demand from quality dispersions.

Diamond Dispersions Ltd was founded in August 2007. It is a progression of Diamond Sheffield Ltd, who were the original producers of high quality dispersions since 2003; the company underwent a management buyout by the Executive Directors Peter Callahan and Sue Wright. Peter and Sue have turned the business around into a leading supplier of inkjet dispersion to some of the main inkjet manufacturers in the world. Their product is distributed to China, India and the USA, the increase in distribution has led to the development of new R&D facilities at their production site in Sheffield.

Diamond Dispersions also produce a comprehensive range of high quality Vinyl Chips for solvent based inkjet inks and a full set of dry powder and liquid dyes for inkjet inks. Through constant refinement of existing products and extensive development of new ones, they remain the best and stay ahead of the market. Before any new product leaves the laboratory and enters their catalogue, they are extensively and exhaustively tested to ensure that they deliver the same high performance as all the other Diamond products.

Peter Callahan, Executive Director of Diamond Dispersions Ltd said: 'By working with the Sorby Nano Investigation Centre we are able to understand how our product worked at the nano scale, this information had not previously been available to us'



Diamond Dispersions Ltd



Diamond Dispersions attended one of the Sorby Nano Investigation Centre's 'Drop in Sessions' which gave them access to the latest microscopy techniques and expertise to analyse their samples – a service not available to them in-house. The two organisations were able to work together on Diamond Dispersions R&D, enabling a better understanding of its core products and processes.

A range of dispersions were imaged using high resolution Scanning Electron Microscopy (SEM). Carbon black, cyan, magenta and yellow dispersions were initially investigated. The images provided definite confirmation as to the size, shape and range of pigment particles that were present. The SEM images found revealed that all the particles were at the nano scale; between 50 and 300nm in size. The size and shape of these particles is important as this affects product performance.

Dr. Martin Highett, Manager of the Sorby Nano Investigation Centre said: 'Our sophisticated analysis techniques confirmed the presence of nano in Diamond Dispersions core product, we are pleased to give access to this unique equipment to local SME's in the South Yorkshire region'

This analysis has contributed towards Diamond Dispersion's product development and confirmed the presence of the nano scale in the dispersion particles. Previous measurements using a Malvern Zetasizer had not proved accurate enough. However, the Sorby Nano Investigation Centre was able to determine the particle size more accurately using sophisticated analysis techniques based on their range of microscopy equipment and expertise. The analysis highlighted the variations in the morphology within each of the colours. This has helped Diamond Dispersion to understand their products at the nano scale and the R&D programme of their product range. For example, the carbon black dispersion particles were determined to be smaller than the sizes originally thought by Diamond Dispersions thereby fulfilling a market driver for finer dispersions. Diamond Dispersions have since used these images as promotional material to create a greater awareness of their product range and market a leading position in the production of nano scale dispersions. This marketing collateral has been presented at trade fairs, which have allowed them to engage with new market avenues in the inkjet industry.

www.sorbynano.org



<http://diamonddispersions.com/index.html>

