Colored, Special Effect Ink

Product:
Colored, Special Effect Ink

Development Stage:
Proof of Concept Completed

Primary Inventor:
Veronika Husovska PhD, Chemical and Paper Engineering

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Colored, special effect inks, used in permanent markers, printers, or other dispensers, have a very attractive appearance and are extremely popular for lettering and drawing on non-porous materials. However, when applied to porous surfaces, like cellulose paper and cardboard, the pigmented and metallic parts of these inks will will separate from one another. The colored pigment will penetrate through the material and the special effect/metallic pigment in the ink will remain on the surface of the material, adulterating the ink's appearance.

Technology Description

Research at WMU has created an ink technology that overcomes the separation issue for porous surfaces. The ink is formulated to produce a shiny color, on almost any common drawing or printing medium. A palette of colored inks with a metallic sheen can be produced from this technology.

The technology entails surface treating a color pigment to form a component more hydrophobic than the special effect pigment, with which it will be combined. The special effect pigment can also be chosen or modified to increase its hydrophilic properties. Dispersions of both pigments are produced separately in solvents compatible with the pigments and each other. The two dispersions are combined to form an ink that is quick drying, and maintains the colored pigment in close proximity to the special effect pigment on the substrate, when completely dry. The color does not bleed through porous papers/mediums (see Figure on next page)

The colored, special effect ink has a drying time of less than 30 seconds - atypical in the printing industry. This fast drying time means that the ink is less likely to smear and becomes durable sooner, providing greater throughput and more creativity in the printing process.

Because the inks can utilize as pigment solvents - alcohols, ethers, esters, ketones, and water - many current printing processes will be enhanced with more vibrant and robust output. Both the solvent-based and water-based printing industries will be attracted to this technology. In addition, the colored, special effect inks stand out on light and dark surfaces and can be used in multiple different delivery devices, such as permanent markers and ink jet printers, making them applicable for use in schools, homes and multiple industries.

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Potential Benefits

- Provides a unique appearance in a palette of colors
- Can be applied to multiple, commonly used substrates
- Quick drying (15-30 seconds)
- Minimal bleeding of color through porous media

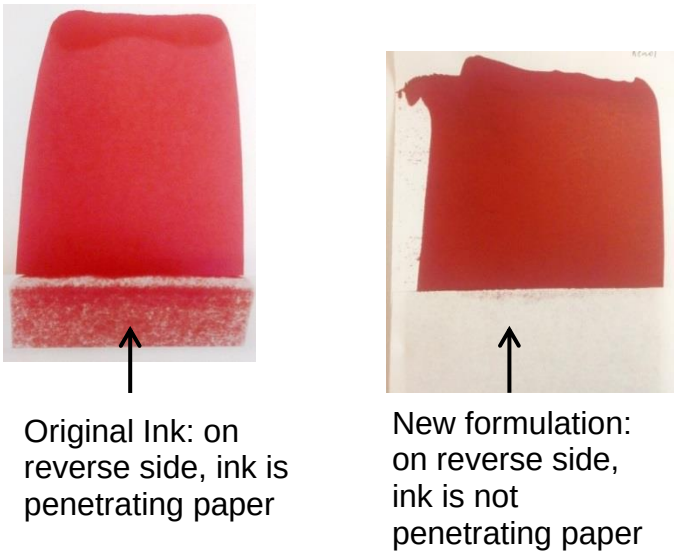

Figure: Original and new high sheen, colored ink showing retention of sheen and color on surface.