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(21) International Application Number: PCT/US97/11638 (22) International Filing Date: 27 June 1997 (27.06.97) (30) Priority Data: 08/721,841 27 September 1996 (27.09.96) US (71) Applicants: BREWER SCIENCE, INC. [US/US]; P.O. Box GG, Rolla, MO 65401 (US). NISSAN CHEMICAL INDUSTRIES, LTD. [JP/JP]; Kowa-Hitotsubashi Building, 7-1, 3-chome, Kanda-Nishiki-cho, Chiyoda-ku, Tokyo 101 (JP). (72) Inventors: SABNIS, Ram, W.; 2205 Vichy Road, Rolla, MO 65401 (US). MAYO, Jonathan, W.; 12402 County Road 8010, Rolla, MO 65401 (US). HAYS, Edith, G.; 110 Bryant Road, Rolla, MO 65401-2908 (US). BREWER, Terry, L.; 17971 County Road 8440, Rolla, MO 65401 (US). STRODER, Michael, D.; 3412 South Willow Wick Trail, Springfield, MO 65809 (US). YANAGIMOTO, Akira; 2-24-4, Kichijoji-Hgashi-cho, Musashino-shi, Tokyo 180 (JP). SONE, Yasuhisa; 1-5-17-103, Narashino, Funabashi-shi, Chiba 274 (JP). WATANABE, Yoshitane; 7-17-15-607, Hiraii, Edogawaku, Tokyo 132 (JP). EMA, Kiyomi; 5-38-24, Nishitsuga, Wakaba-ku, Chiba-shi, Chiba 264 (JP).		(74) Agent: PEOPLES, Vco, Jr.; Peoples & Hale, Suite 500, 1221 Locust Street, St. Louis, MO 63103-2364 (US). (81) Designated States: CN, FI, JP, KR, SG, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>
(54) Title: ULTRA THIN ORGANIC BLACK MATRIX		
(57) Abstract An organic black matrix having high resistivity ($\geq 10^{11}$ ohm/square), high optical density (≥ 2.0) at ultra thin film thicknesses (≤ 1.0 microns) for improved STN and TFT pixel display applications is made possible by combining polyimide/dye solutions and mixed metal oxide pigment dispersions at a weight/weight ratio of dye to pigment of 1:15 to 3:15. The need for low resistivity carbon black, as a replacement for sputtered chrome, is negated. <pre>graph TD; A[PREPARE SUBSTRATE] --> B[ADHESION PROMOTER]; B --> C[COAT BM]; C --> D["λ - BAKE"]; D --> E["δ - BAKE"]; E --> F[COAT PHOTORESIST]; F --> G[EXPOSE]; G --> H[DEVELOP]; H --> I[STRIP PHOTORESIST]; I --> J[FINAL CURE OF BM]; J --> K[APPLY OTHER COLORS];</pre>		