ONLINE ISSN : 1882-4935
PRINT ISSN : 0914-3319

Journal of Printing Science and Technology
Vol. 43 (2006) , No. 1 pp.007-015

A Study of High Accuracy Screen Printing Method (HADOP) - Improvement for HADOP System and Application to Color Filters-

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Abstract

The high accuracy screen printing method (HADOP)was evaluated for improved structure of a printing plate, and 25μm stripe pattern printing was achieved by preparing new photosensitive materials, basically composed of acrylic co-polymer with flexible acryroil groups. The UV Ink was prepared by conventional materials design of UV hardening. The physical properties of the prepared ink were evaluated for application of HADOP. High accuracy screen printing method was achieved by the combination of an ink constituent having viscosity characteristic and by the selection of a high resolution plate. The UV ink of high thixotropic state was used to HADOP patterning because of great importance in viscose and flat property of ink. HADOP was composed of a printing plate and negative resist materials to optimize printing materials. As a result, the superior and sharp imaging was performed by increasing the transferring ratio of ink. Thus, isolated lines of 20μm levels were completed by the improvement for HADOP method. Color filters of preferred color reproduction were obtains by the isolated lines. The color filter prepared by the UV ink shows good color balance under white illumination and desirable characteristics than conventional color filters.