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| <b>(51) International Patent Classification <sup>6</sup> :</b><br><b>C08G 8/08, G03F 7/023</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>A1</b>                                                                                                                                                                                                                                                                                                                                           | <b>(11) International Publication Number:</b> <b>WO 97/20873</b><br><b>(43) International Publication Date:</b> 12 June 1997 (12.06.97) |
| <b>(21) International Application Number:</b> PCT/US96/18781 ✓<br><b>(22) International Filing Date:</b> 21 November 1996 (21.11.96) ✓<br><b>(30) Priority Data:</b><br>08/568,916 7 December 1995 (07.12.95) ✓ US<br><b>(71) Applicant:</b> HOECHST CELANESE CORPORATION<br>[US/US]; Route 202-206 North, Somerville, NJ 08876 (US).<br><b>(72) Inventors:</b> RAHMAN, M., Dalil; 62 Concord Ridge Road, Flemington, NJ 08822 (US). LU, Ping-Hung; 473 Steeple Chase Lane, Bridgewater, NJ 08807 (US).<br><b>(74) Agents:</b> SAYKO, Andrew, F., Jr. et al.; Hoechst Celanese Corporation, 70 Meister Avenue, Sommerville, NJ 08876 (US). | <b>(81) Designated States:</b> CN, JP, KR, <u>SG</u> European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).<br><br><b>Published</b><br><i>With international search report.<br/>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> |                                                                                                                                         |
| <b>(54) Title:</b> ISOLATION OF NOVOLAK RESIN WITHOUT HIGH TEMPERATURE DISTILLATION AND PHOTORESIST COMPOSITION THEREFROM<br><br><b>(57) Abstract</b><br><br>The present invention provides a method for producing a water insoluble, aqueous alkali soluble novolak resins having consistent molecular weight and superior performance in photoresist composition, by isolating such novolak resin without high temperature distillation. A method is also provided for producing photoresist composition from such a novolak resin and for producing semiconductor devices using such a photoresist composition.                         |                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                         |