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<p>(21) International Application Number: PCT/US97/03062 (22) International Filing Date: 27 February 1997 (27.02.97) (30) Priority Data: 60/013,008 7 March 1996 (07.03.96) US (71) Applicant: HOECHST CELANESE CORPORATION [US/US]; Route 202-206 North, Somerville, NJ 08876 (US). (72) Inventors: DAMMEL, Ralph, R.; 8 Quimby Lane, Flemington, NJ 08822 (US). LU, Ping-Hung; 473 Steeple Chase Lane, Bridgewater, NJ 08807 (US). SPAK, Mark, A.; One Hallo Street, Edison, NJ 08837 (US). ALILE, Oghogho; Apartment 10L, 320 South Harrison Street, East Orange, NJ 07018 (US). (74) Agents: SAYKO, Andrew, F. et al.; Hoechst Celanese Corporation, 70 Meister Avenue, Somerville, NJ 08876 (US).</p>	<p>(81) Designated States: CN, 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. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 13 November 1997 (13.11.97)</p>	
<p>(54) Title: THERMAL TREATMENT PROCESS OF POSITIVE PHOTORESIST COMPOSITION (57) Abstract <p>A flash softbake process for a diazonaphthoquinone sulfonate ester-novolak positive photoresist is described which offers significant advantages. This process uses a higher than conventional soft-baking (SB) temperature (≥ 130 °C) and a very short baking time (≤ 30 seconds) of the resist, preferably over a bottom antireflective coating. It significantly improves the photoresist's resolution, process latitude, thermal deformation temperature, resist adhesion and plasma etch resistance. If a low reflectivity substrate or an antireflective coating is used, it also eliminates the need for a post exposure bake (PEB) step during the photolithographic process, without causing a severe standing wave effect.</p></p>		

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/03062

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 G03F/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G03F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 33 05 923 A (SIEMENS AG) 23 August 1984	1-6
Y	see the whole document	7-14

Y	SOLID STATE TECHNOLOGY, vol. 32, no. 2, February 1989, pages 89-93, XP000027986 YOON S F ET AL: "THE EFFECT OF ELEVATED SOFTBAKE TEMPERATURE ON HIGH RESOLUTION POSITIVE PHOTORESIST" see the whole document	7-14

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Patent family members are listed in annex.

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+ 31-70) 340-3016

Authorized officer

Haenisch, U

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International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>JOURNAL OF VACUUM SCIENCE AND TECHNOLOGY: PART B, vol. 10, no. 6, 1 November 1992, pages 2536-2541, XP000331709 OMKARAM NALAMASU: "CHARACTERISTICS OF AN IMPROVED CHEMICALLY AMPLIFIED DEEP- ULTRAVIOLET POSITIVE RESIST" see the whole document -----</p>	7-14

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 3305923 A	23-08-84	NONE	