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(54) Title: TEMPLATE FOR ROOM TEMPERATURE, LOW PRESSURE MICRO- AND NANO-IMPRINT LITHOGRAPHY



(57) Abstract: Described are imprint lithography templates, methods of forming and using the templates, and a template holder device. An imprint lithography template may include a body with a plurality of recesses on a surface of the body. The body may be of a material that is substantially transparent to activating light. At least a portion of the plurality of recesses may define features having a feature size less than about 250 nm. A template may be formed by obtaining a material that is substantially transparent to activating light and forming a plurality of recesses on a surface of the template. In some embodiments, a template may further include at least one alignment mark. In some embodiments, a template may further include a gap sensing area. An imprint lithography template may be used to form an imprinted layer in a light curable liquid disposed on a substrate. During use, the template may be disposed within a template holder. The template holder may include a body with an opening configured to receive the template, a support plate, and at least one piezo actuator coupled to the body. The piezo actuator may be configured to alter a physical dimension of the template during use.



WO 02/067055 A3

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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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 7 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)
EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	WHITE D L ET AL: "Novel alignment system for imprint lithography" JOURNAL OF VACUUM SCIENCE AND TECHNOLOGY: PART B, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 18, no. 6, November 2000 (2000-11), pages 3552-3556, XP002204287 44th Intnl. Conf. on Electron, Ion and Photon Beam Technology and Nanofabrication, 30-May to 2-June 2000, Rancho Mirage, CA, USA ISSN: 0734-211X	1-11, 15-32, 66-75, 95,96, 159-167
Y	the whole document	12-14, 33-64, 97-158
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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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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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