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21/00, 24/00

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GW, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations
- of inventorship (Rule 4.17(iv)) for US only

**Published:**

- with international search report

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22 July 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MONOMERS AND POLYMERS HAVING ENERGY ABSORBING MOIETIES OF USE IN DESORPTION/IONIZATION OF ANALYTES

(57) Abstract: The present invention provides polymerizable monomers that incorporate moieties derived from energy absorbing molecules (EAM). The invention also provides polymers that are based on the monomers. The polymers have unique properties that make them ideally suited for use in diverse analyses, including desorption/ionization mass spectrometry of analytes. The invention also provides a device that incorporates the polymeric compositions of the inventions, methods of using the device to detect, quantify and identify analytes, and a method of preparing a device of the invention.



WO 2003/064594 A3

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US02/41197

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
IPC(7) : G01N 33/44,; 21/00; 24/00		
US CL : 436/85, 164, 173		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) U.S. : 436/85, 164, 173		
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 practicable, search terms used) Please See Continuation Sheet		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,719,060 A (HUTCHENS et al.) 17 February 1998 (17.02.1998), Abstract, col. 12-14, Example 4, especially col. 33, lines 42-52	1-2
X	US 3,070,442 A (COHEN et al. ) 25 December 1962 (25.12.1962), the whole document, especially col. 2, lines 60-70	1-14, 16-21
X	JP 11165052 A (TORAY IND INC..) 22 June 1999 (22.06.1999), Abstract, Claims	1-14, 16-27, 29-40, 45-48, 52-54, 59-62
X	JP 04-071896 A (FUJI PHOTO FILM CO) 06 March 1992 (06.03.1992), Abstract	1-14, 16-27, 29-40
X	US 5,002,582 A (GUIRE et al.) 26 March 1991 (26.03.1991), the whole text	1-14, 16-21
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Y		22-27, 29-43, 45-55, 59-62
X	US 5,741,551 A (GUIRE et al.) 21 April 1998 (21.04.1998), the whole text	1-14, 16-21
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Y		22-27, 29-43, 45-55, 59-62
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents:		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed	
Date of the actual completion of the international search		Date of mailing of the international search report
06 March 2004 (06.03.2004)		13 APR 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer Yelena G. Gakh, Ph.D. <i>Yelena G. Gakh</i> Telephone No. (571) 272-1700

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/41197

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claim Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claim Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claim Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:  
Please See Continuation Sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

- Remark on Protest**
- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

**BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING**

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-21, drawn to a polymerizable monomer and polymeric material comprising a photo-reactive polymer.

Group II, claim(s) 22-55, 59-62, drawn to a device and a kit comprising a substrate and a polymeric material comprising photo-reactive polymer, and a method of making a device.

Group III, claim(s) 56-58, drawn to a method of detecting an analyte.

The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the common technical feature for three inventions is a photo-reactive polymeric material, which is well known in the art, see e.g. US 3,070,442. Therefore, the inventions lack a common special technical feature, and the restriction requirement is proper.

**Continuation of B. FIELDS SEARCHED Item 3:**

STN,  
EAST