



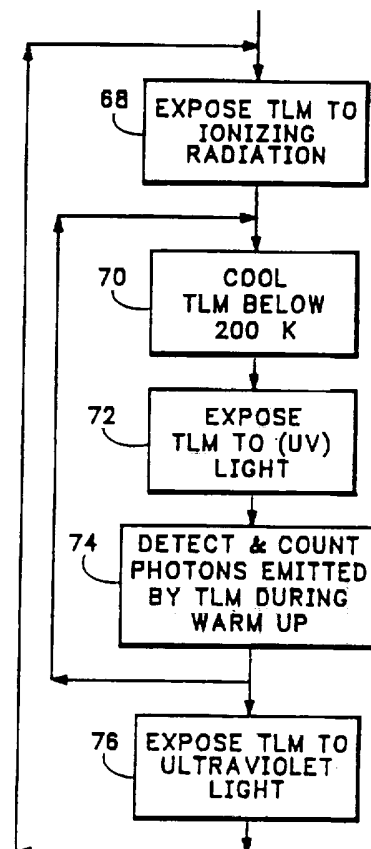
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/US90/05810 (22) International Filing Date: 9 October 1990 (09.10.90) (30) Priority data: 420,293 11 October 1989 (11.10.89) US (71) Applicant: BATTELLE MEMORIAL INSTITUTE [US/US]; 902 Battelle Boulevard, Richland, WA 99352 (US). (72) Inventors: MILLER, Steven, D. ; 1113 Cedar, Richland, WA 99352 (US). MCDONALD, Joseph, C. ; 8503 W. Adams, Pasco, WA 99301 (US). EICHNER, Fred, N. ; 502 S. Kellogg, Kennewick, WA 99336 (US). TOMERASEN, Paul, L. ; 5684 Fern, West Richland, WA 99352 (US).		(74) Agent: MAY, Stephen, R.; Battelle Memorial Institute, 902 Battelle Boulevard, Richland, WA 99352 (US). (81) Designated States: AT (European patent), BE (European patent), CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), GR (European patent), IT (European patent), JP, LU (European patent), NL (European patent), SE (European patent), SU. Published <i>With international search report.</i> <i>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: 27 June 1991 (27.06.91)

(54) Title: METHOD FOR DETECTING RADIATION DOSE UTILIZING THERMOLUMINESCENT MATERIAL

(57) Abstract

The amount of ionizing radiation to which a thermoluminescent material has been exposed is determined by first cooling the thermoluminescent material to a cryogenic temperature. The thermoluminescent material is then optically stimulated by exposure to ultraviolet light. Visible light emitted by the thermoluminescent material as it is allowed to warm up to room temperature is detected and counted. The thermoluminescent material may be annealed by exposure to ultraviolet light.



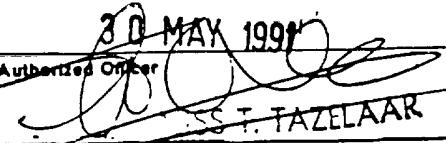
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INTERNATIONAL SEARCH REPORT

International Application No PCT/US 90/05810

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC		
IPC ⁵ : G 01 T 1/11		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
IPC ⁵	G 01 T	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ⁹		
Category ¹⁰	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
P	WO, A, 9000258 (BATTELLE MEMORIAL INST.) 11 January 1990 see page 3, lines 5-15, 20-30; page 4, line 31 - page 5, line 30; page 7, lines 13-23; page 8, line 20 - page 9, line 10; figures	1, 2, 7-9, 12
X		25-29
Y	cited in the application --	10, 11, 17, 23
Y	EP, A, 0056599 (FUJI PHOTO FILM CO. LTD) 28 July 1982 see abstract; page 2, line 29 - page 3, line 9; page 7, lines 30-31; page 8, lines 10-14 --	10, 11, 17, 23
A	US, A, 3835329 (MORAN & PEARSON) 10 September 1974 see abstract; column 3, lines 17-57; column 4, lines 3-14; table 1; column 7, lines 4-14 --	1, 9, 12, 23
<p>¹⁰ Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) of which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"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</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"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</p> <p>"&" document member of the same patent family</p>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
22nd April 1991	30 MAY 1991	
International Searching Authority	Signature of Authorized Officer	
EUROPEAN PATENT OFFICE	 J. TAZELAAR	

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category *	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No
A	US, A, 4054405 (FACEY et al.) 18 October 1977 see abstract; column 2, lines 35-54 -----	25,26,28,29

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.**

US 9005810

SA 43301

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on 27/05/91. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO-A- 9000258	11-01-90	US-A- 4954707	04-09-90
EP-A- 0056599	28-07-82	JP-C- 1441274	30-05-88
		JP-A- 57116300	20-07-82
		JP-B- 62051458	30-10-87
		US-A- 4439682	27-03-84
US-A- 3835329	10-09-74	None	
US-A- 4054405	18-10-77	CA-A- 1016671	30-08-77
		CA-A- 1016894	06-09-77

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82