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(54) Title: NOVEL THIOPHENE-BASED DYE AND PREPARATION THEREOF

(57) Abstract: The present invention relates to a thiophene-based dye and a preparation thereof, and more particularly, to dye compounds, which are used for a dye-sensitized solar cell (DSSC), and provides better molar extinction coefficient, JSc (short-circuit photocurrent density) and photoelectric conversion efficiency than a conventional dye to enhance efficiency of a solar cell.



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INTERNATIONAL SEARCH REPORT

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 8: C07D

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

eKIPASS(KIPO internal), Delphion, Pubmed (thiophene, thienothiophene, dithienothiophene, dye, photoelectric conversion element, dye-sensitized solar cell)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X/A	Hara K et al., Oligothiophene-containing coumarin dyes for efficient dye-sensitized solar cells. J. Phys. Chem. B. 2005 Aug 18; 109(32): 15476-15482. See chart 1, abstract	1-4, 13-18(partly)/ 5-12, 13-18(partly)
A	US 4639328 A (MERCK PATENT GMBH) 27 January 1987 See claim 1	1-18
A	EP 1477504 A1 (MERCK PATENT GMBH) 17 November 2004 See abstract, paragraph [0009], claim 3	1-18
A	US 7118692 B2 (AIR PRODUCTS AND CHEMICALS, Inc) 10 October 2006 See claim 1, abstract	1-18
A	JP 2006-232898 A (RICOH CO LTD) 07 September 2006 See abstract, claim 1	1-18
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 Further documents are listed in the continuation of Box C. See patent family annex.

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