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(71) Applicant (for all designated States except US): **THE RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK** [US/US]; STOR Intellectual Property Division, UB Technology Incubator, Suite 111, Amherst, NY 14228-2567 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **YONG, Ken-Tye** [MY/US]; 131 Bryant Street, Apt. 4, North Tonawanda, NY 14120 (US). **ROY, Indrajit** [IN/US]; 168 Princeton Avenue, Apt. 2, Amherst, NY 14226 (US). **PRASAD, Paras, N.** [US/US]; 51 Waterford Park, Williamsville, NY 14221 (US).

(74) Agents: **KADLE, Ranjana** et al.; Hodgson Russ LLP, The Guaranty Building, 140 Pearl Street, Suite 100, Buffalo, NY 14202-4040 (US).

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(54) Title: A METHOD TO PRODUCE WATER-DISPERSIBLE HIGHLY LUMINESCENT QUANTUM DOTS FOR BIOMEDICAL IMAGING

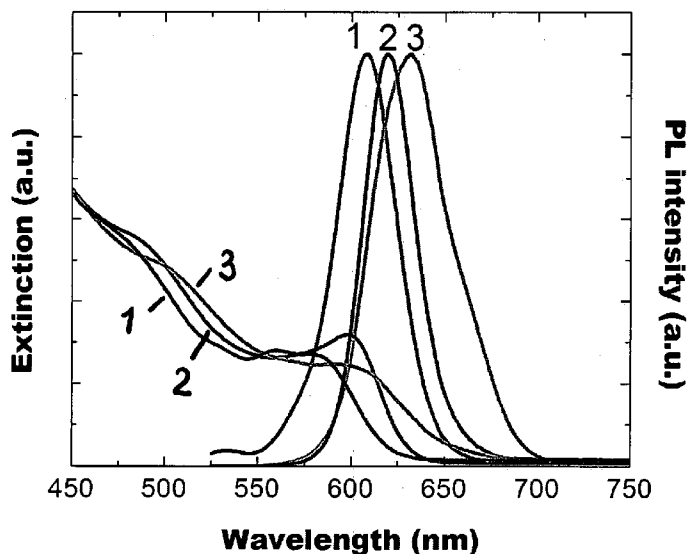


Figure 4

(57) Abstract: The invention disclosed herein provides a quick, low-temperature method for production of highly luminescent, CdS/ZnS graded-shell passivated, CdSe-core-nanocrystal quantum dots. The method uses non-toxic, easy-to-handle cadmium, zinc and sulfur precursors. Quantum dots produced using the present method are suitable for bioimaging applications.

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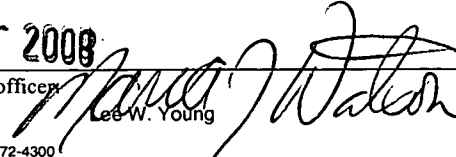


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A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - B82B 3/00, 1/00 ; C22C 20/00 (2008.04) USPC - 977/824, 774 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) USPC: 977/824, 774 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC: 977/824, 774; 420/525 Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST (USPT, PGPB, EPAB, JPAB); Google patent, USPTO Search Terms: cadmium, zinc, selenide, sulfide, quantum dot, QD, trialkylphosphine, mercepto, nanocrystal, hexane, ammonium hydroxide		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005/0054004 A1 (Alivisatos et al.) 10 March 2005 (10.03.2005) (para [0013] [0030] [0033])	1-16
Y	US 2006/0110279 A1 (Han et al.) 25 May 2006 (25.06.2005) (para [0013] [0014] [0043] [0046] [0082] [0090] [0099] [0115])	1-16
Y	US 2007/0240227 A1 (Zhang et al.) 26 October 2006 (26.10.2006) Para [0087] [0099]	2, 4, 9
Y	US 2005/0084443 A1 (Bawendi et al.) 21 April 2005 (21.04.2005) (para [0020])	3
Y	US 6,869,545 B2 (Peng et al.) 22 March 2005 (22.03.2005) (col 4 ln 5-6)	12, 13
Y	US 6,139,626 A (Norris et al.) 31 October 2000 (31.10.2000) (col 10 ln 13)	16
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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. 571-273-3201		Authorized officer  Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774