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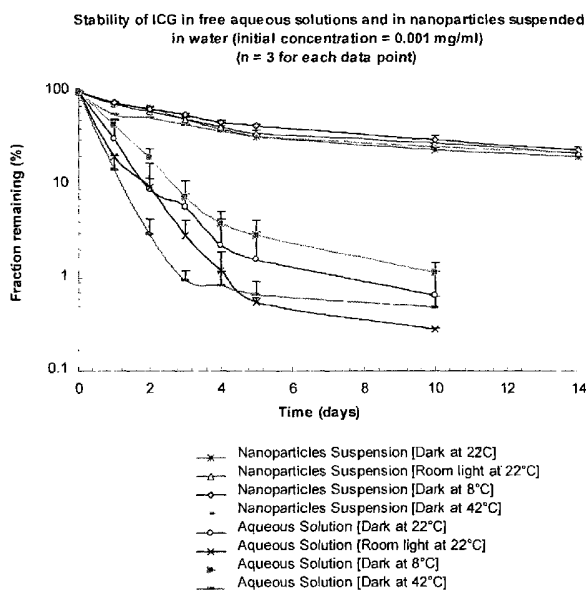
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[Continued on next page]

(54) Title: NANOPARTICLE BASED STABILIZATION OF IR FLUORESCENT DYES



(57) Abstract: This invention relates to a highly effective nanoparticle system for stabilizing near-infrared (near-IR) fluorescent dyes such as indocyanine (ICG) in order to enhance the dye's utility for biomedical application. This invention further relates to nanoparticles comprised of biodegradable polymer materials such as poly(dl-lactide-co-glycolide)(PLGA). The invention also relates to methods of preparing the nanoparticle-entrapped dyes, as well as methods for using them in bioimaging, diagnosis, and treatment of disease. The present invention also relates to compositions and kits comprising nanoparticle-entrapped dyes.

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**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/US04/01472

<p><b>A. CLASSIFICATION OF SUBJECT MATTER</b>                  IPC(7) : A61B 10/00; B32B 5/16; G01N 33/544                  US CL : 428/402,403,407; 424/9.6,489,490; 436/64,512,528,532,535                  According to International Patent Classification (IPC) or to both national classification and IPC</p>																			
<p><b>B. FIELDS SEARCHED</b>                  Minimum documentation searched (classification system followed by classification symbols)                  U.S. : 428/402,403,407; 424/9.6,489,490; 436/64,512,528,532,535                  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)                  WEST</p>																			
<p><b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b></p> <table border="1"> <thead> <tr> <th>Category *</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>US 6,268,222 B1 (CHANDLER et al) 31 July 2001, abstract, col. 3, lines 15-20, col. 4, lines 3-10, examples col. 24, lines 34-42.</td> <td>1-19</td> </tr> <tr> <td>X</td> <td>US 6,424,857 B1(HENRICHES et al) 23 July 2002, col. 8, lines 3-22.</td> <td>1 and 5</td> </tr> <tr> <td>X</td> <td>US 6,602,932 B2 (FELDHEIM et al) 05 August 2003, abstract, col. 2, lines 15-28.</td> <td>1 and 5</td> </tr> <tr> <td>X</td> <td>US 6,471,968 B1 (BAKER et al) 29 October 2002, col. 2, lines 30-50.</td> <td>1 and 5</td> </tr> <tr> <td>X</td> <td>US 6,214,560 B1 (YGUERABIDE et al) 10 April 2001, entire document.</td> <td>1-19</td> </tr> </tbody> </table>		Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 6,268,222 B1 (CHANDLER et al) 31 July 2001, abstract, col. 3, lines 15-20, col. 4, lines 3-10, examples col. 24, lines 34-42.	1-19	X	US 6,424,857 B1(HENRICHES et al) 23 July 2002, col. 8, lines 3-22.	1 and 5	X	US 6,602,932 B2 (FELDHEIM et al) 05 August 2003, abstract, col. 2, lines 15-28.	1 and 5	X	US 6,471,968 B1 (BAKER et al) 29 October 2002, col. 2, lines 30-50.	1 and 5	X	US 6,214,560 B1 (YGUERABIDE et al) 10 April 2001, entire document.	1-19
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<p><input type="checkbox"/> Further documents are listed in the continuation of Box C.      <input type="checkbox"/> See patent family annex.</p>																			
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<p>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</p>	<p>Authorized officer                  H. T. LE                  Telephone No. 571-272-1511  </p>																		