(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
7 June 2012 (07.06.2012)

WIPO | PCT

(10) International Publication Number
WO 2012/074931 A3

(51) **International Patent Classification**:
C09B 45/01 (2006.01)

(21) **International Application Number**:
PCT/US2011/062248

(22) **International Filing Date**:
28 November 2011 (28.11.2011)

(25) **Filing Language**: English

(26) **Publication Language**: English

(30) **Priority Data**:
61/417,785 29 November 2010 (29.11.2010) US

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(81) **Designated States** *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) **Designated States** *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) **Title**: PHOTOLINDUCED ALKYNE-AZIDE CLICK REACTIONS

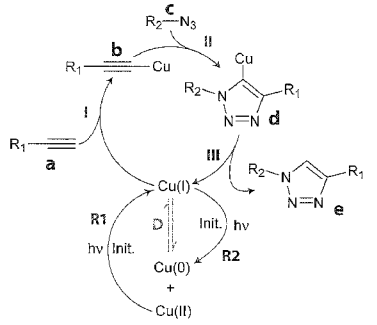


Fig. 1A

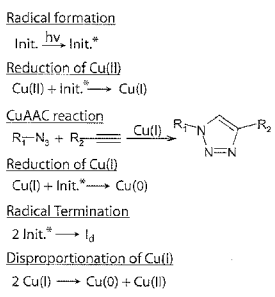


Fig. 1B

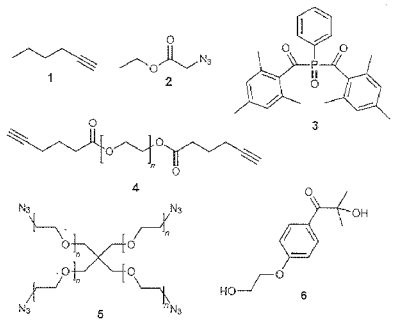


Fig. 1C

(57) **Abstract**: The present invention includes a composition comprising an alkyne- based substrate, an azide-based substrate, a Cu(II) salt and a photoinducible reducing agent, The present invention further includes a method of immobilizing a chemical structure in a given pattern onto a section of the surface of a solid substrate, using the photoinducible Cu(I)-catalyzed azide-alkyne cycloaddition Click reaction.

WO 2012/074931 A3

WO 2012/074931 A3

Published:

— *with international search report (Art. 21(3))*

(88) Date of publication of the international search report:
3 April 2014

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 11/62248

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - C09B 45/01 (2012.01)
USPC - 534/602
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 - 534/602,623,640

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)
PubWEST (USPT, PGPB, JPAB, EPAB)
Search Terms: Click chemistry, reaction, azide, alkyne, photomask, substrate, reducing agent, titanium dioxide, ultraviolet, electromagnetic, radiation, expose

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	HIMO et al., Copper(I)-Catalyzed Synthesis of Azoles. DFT Study Predicts Unprecedented Reactivity and Intermediates, Contribution from the Department of Molecular Biology, and Department of Chemistry and The Skaggs Institute for Chemical Biology, The Scripps Research Institute, Published on Web 12/08/2004, entire document especially pages 210-212	1-20
Y	US 6,727,034 B1 (Ogiso et al.) 27 Apr 2004 (27.04.2004), entire document especially Abstract, col 12, ln 40-50, col 17, ln 25-40, Example 1	1-20
A	PERERA, Development of clickable approaches to build functional polymeric nanoparticles, Thesis submitted to the University of Nottingham, The University of Nottingham School of Pharmacy, Nottingham UK, September 2009, entire document	1-20

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 Mar 2012 (27.03.2012)	05 APR 2012
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

Form PCT/ISA/210 (second sheet) (July 2009)