



(51) International Patent Classification:

B01L 7/00 (2006.01) *B01L 3/00* (2006.01)
C12M 1/34 (2006.01) *C12N 15/10* (2006.01)
C12Q 1/68 (2006.01) *G01N 21/64* (2006.01)

(21) International Application Number:

PCT/IB2011/051872

(22) International Filing Date:

28 April 2011 (28.04.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

1215/CHE/2010 30 April 2010 (30.04.2010) IN

(71) Applicant (for all designated States except US):
BIGTEC PRIVATE LIMITED [IN/IN]; 2nd Floor, SID
 Entrepreneurship Centre, Indian Institute of Science Cam-
 pus, Bangalore, Karnataka 560 012 (IN).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CHANDRA,**
Swetha [IN/IN]; c/o. Department of Physics, Indian Insti-
 tute of Science, Bangalore, Karnataka 560 012 (IN).
MONDAL, Sudip [IN/IN]; c/o. National Centre of Bio-
 logical Science (NCBS), Bangalore, Karnataka 560 065
 (IN). **VENKATAKRISHNAN, Venkataraman** [IN/IN];
 c/o. Department of Physics, Indian Institute of Science,
 Bangalore, Karnataka 560 012 (IN). **VISWANATHAN,**
Sathyadeep [IN/IN]; c/o. BIGTEC PRIVATE LIMITED,

2nd Floor, SID Entrepreneurship Centre, Indian Institute
 of Science Campus, Bangalore, Karnataka 560 012 (IN).
RADHAKRISHNAN, Renjith Mahiladevi [IN/IN]; c/o.
 BIGTEC PRIVATE LIMITED, 2nd Floor, SID En-
 trepreneurship Centre, Indian Institute of Science Cam-
 pus, Bangalore, Karnataka 560 012 (IN). **JAYARAMAN,**
Raviprakash [IN/IN]; c/o. BIGTEC PRIVATE LIMIT-
 ED, 2nd Floor, SID Entrepreneurship Centre, Indian In-
 stitute of Science Campus, Bangalore, Karnataka 560 012
 (IN). **BHASKARAN NAIR, Chandrasekhar** [IN/IN]; c/
 o. BIGTEC PRIVATE LIMITED, 2nd Floor, SID En-
 trepreneurship Centre, Indian Institute of Science Cam-
 pus, Bangalore, Karnataka 560 012 (IN). **SUBBARAO,**
Pillarisetti Venkata [IN/IN]; c/o. BIGTEC PRIVATE
 LIMITED, 2nd Floor, SID Entrepreneurship Centre, Indi-
 an Institute of Science Campus, Bangalore, Karnataka
 560 012 (IN).

(74) Agents: **BHOLA, Ravi** et al.; # 4121/B, 6th Cross, 19th
 A Main, HAL II Stage [Extension], 560 038 Bangalore,
 Karnataka (IN).

(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, RO, RS, RU, SC, SD,

[Continued on next page]

(54) Title: A NON CONTACT REAL TIME MICRO POLYMERASE CHAIN REACTION SYSTEM AND METHOD THERE-
 OF

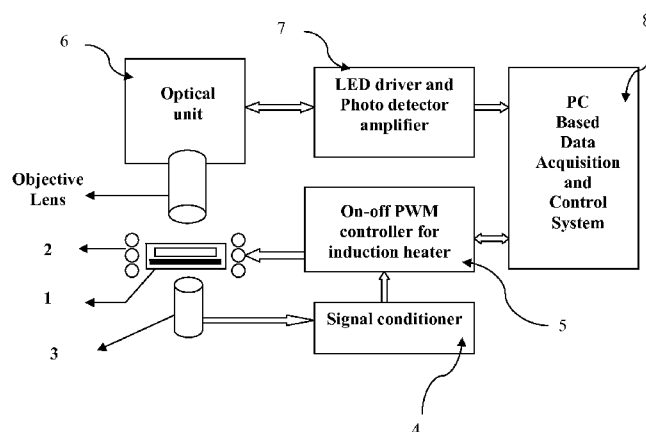


FIG. 1

(57) Abstract: The present disclosure provides a non contact real time micro Polymerase Chain Reaction [PCR] system compris-
 es; a chip having a reaction chamber for holding a sample and an embedded metal heater below the reaction chamber for heating
 the sample; an optical unit comprising associated LED driver and photo detector amplifier placed above the chip to detect the flu-
 orescence; an induction heater mounted around the chip and is inductively coupled to the metal heater; an infrared temperature
 sensor mounted below the chip for measuring a temperature of the metal heater, wherein said infrared temperature sensor is in-
 terfaced with a signal conditioner; and a controller interfaced with the signal conditioner and the induction heater for regulating the
 power to the induction heater based on feedback received from the infrared temperature sensor through the signal conditioner.



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, 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).

Declarations under Rule 4.17:

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

Published:

- with international search report (Art. 21(3))