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- (71) Applicants: AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH [SG/SG]; 1 Fusionopolis Way, #20-10, Connexis North, Singapore 138632 (SG). SINGAPORE HEALTH SERVICES PTE LTD [SG/SG]; 10 Hospital Boulevard #19-01, Singapore 168582 (SG).
- (72) Inventors: ZHANG, Shuyan; c/o Institute of Bioengineering and Bioimaging, 31 Biopolis Way, #07-01 Nanos, Singapore 138669 (SG). UNNIMADHAVA KURUP SOUDAMINI AMMA, Dinish; c/o Institute of Bioengineering and Bioimaging, 31 Biopolis Way, #07-01 Nanos, Singapore 138669 (SG). PERUMAL, Jayakumar; c/o Institute of Bioengineering and Bioimaging, 31 Biopolis Way, #07-01 Nanos, Singapore 138669 (SG). OLIVO, Malini; c/o Institute of Bioengineering and Bioimaging, 31 Biopolis

Way, #07-01 Nanos, Singapore 138669 (SG). CHEN, Yi Fan; c/o Institute of Materials Research and Engineering, 2 Fusionopolis Way, Innovis, Singapore 138634 (SG). WU, Qing Yang Steve; c/o Institute of Materials Research and Engineering, 2 Fusionopolis Way, Innovis, Singapore 138634 (SG). TENG, Jinghua; c/o Institute of Materials Research and Engineering, 2 Fusionopolis Way, Innovis, Singapore 138634 (SG). LEE-LIM, Ann Siew Gek; c/o National Cancer Centre Singapore, 11 Hospital Crescent, Singapore 169610 (SG). HUM, Wen Ching Melissa; c/o National Cancer Centre Singapore, 11 Hospital Crescent, Singapore 169610 (SG).

(74) Agent: CSASIA IP PTE. LTD.; 47 Scotts Road, #13-03, Goldbell Towers, Singapore 228233 (SG).

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(54) Title: BIOMARKER DETECTION USING SURFACE-ENHANCED INFRARED SPECTROSCOPY

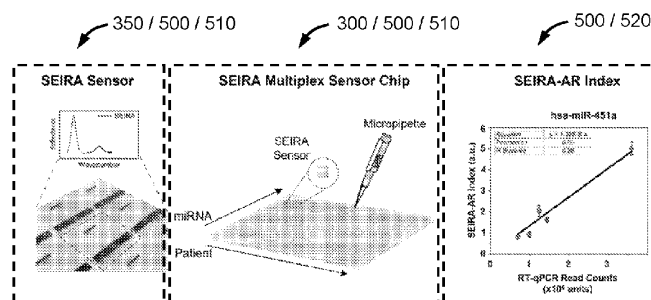


FIG. 13

(57) Abstract: A method includes determining a first change from a first FTIR spectrum of bare SEIRA structures to a second FTIR spectrum of SEIRA structures bound with complementary molecules; determining a second change from the second FTIR spectrum to a third FTIR spectrum of SEIRA structures bound with the complementary molecules and the target molecules; and determining a presence and/or a concentration of the target molecule. The method may include determining an area ratio indicative of a concentration of the target molecule. A device includes a plurality of wells to receive an amount of the sample. Each well is isolated from any other of the plurality of wells. A SEIRA sensor is disposed in each well, in which the SEIRA sensor is configured with a resonant response in a plurality of resonant peak frequencies distributed over a range of frequencies.

[Continued on next page]

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