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- (71) **Applicant: SINGAPORE HEALTH SERVICES PTE LTD** [SG/SG]; 10 Hospital Boulevard, #19-01 Outram Community Hospital, Singapore 168582 (SG).
- (72) **Inventors: SCHMETTERER, Leopold;** c/o Singapore Eye Research Institute (SERI), The Academia, 20 College Road, Discovery Tower, Level 6, Singapore 169856 (SG).
LIU, Xinyu; c/o Singapore Eye Research Institute (SERI), The Academia, 20 College Road, Discovery Tower, Level 6, Singapore 169856 (SG).
- (74) **Agent: DAVIES COLLISON CAVE ASIA PTE. LTD.;** 10 Collyer Quay #07-01, Ocean Financial Centre, Singapore 049315 (SG).
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(54) **Title:** METHODS AND SYSTEMS FOR POLARIZATION-SENSITIVE OPTICAL COHERENCE TOMOGRAPHY

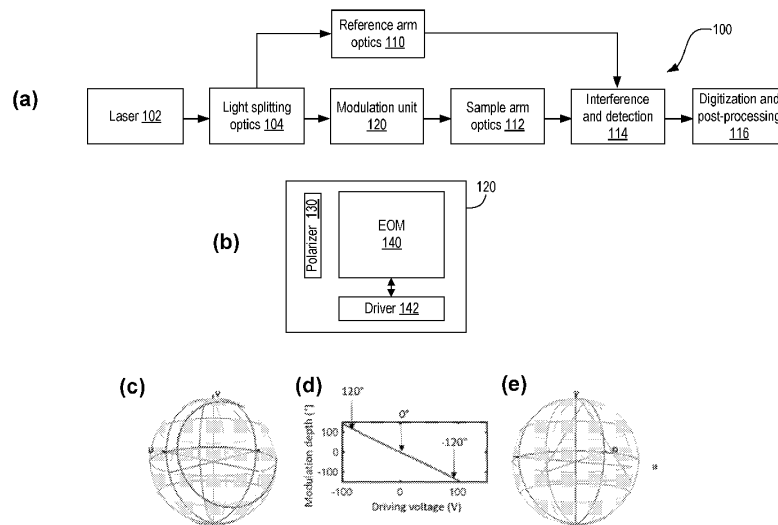


Figure 1

(57) **Abstract:** A system for polarization-sensitive optical coherence tomography (PS-OCT) of a sample comprises an interferometric arrangement comprising a reference arm and a sample arm, the sample arm being arranged to emit optical radiation towards the sample; a phase modulation system arranged at an input to the sample arm; and a detector arranged to detect a signal generated by interference between a reference beam from the reference arm and a sample beam from the sample arm. The phase modulation system comprises: an electro-optic modulator; a polarizer arranged at a rotation angle relative to the fast axis of the electro-optic modulator; and a signal generator for delivering a driving voltage to the electro-optic modulator; wherein the rotation angle and the driving voltage are selected such that the phase modulation system generates three mutually orthogonal polarization states.

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