IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:	Al-Ali et al.	
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Title:	MULTIPLE WAVELENGTH SENSOR SUBSTRATE	

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PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT NO. 7,761,127 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42

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EXHIBITS

APPLE-1001	U.S. Patent No. 7,761,127 to Al-Ali ("the '127 Patent")
APPLE-1002	Excerpts from the Prosecution History of the '127 Patent
APPLE-1003	Expert Declaration of Brian Anthony, Ph.D.
APPLE-1004	Certified English Translation of Japanese Patent Publication No. JP 2004-337605 A ("Yamada")
APPLE-1005	U.S. Patent No. 3,514,538 ("Chadwick")
APPLE-1006	U.S. Patent No. 4,591,659 ("Leibowitz")
APPLE-1007	U.S. Patent No. 5,259,381 ("Cheung")
APPLE-1008	U.S. Patent No. 5,334,916 ("Noguchi")
APPLE-1009	[RESERVED]
APPLE-1010	[RESERVED]
APPLE-1011	Japanese Patent Publication No. JP 2004-337605 A
APPLE-1012	Respondent Apple Inc.'s Post-Hearing Brief, *In the Matter of Certain Light-Based Physiological Measurement Devices and Components Thereof*, International Trade Commission Investigation No. 337-TA-1276 (June 27, 2022) (Public Version)
APPLE-1013	*Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation*, issued June 21, 2022 ("Interim Guidance")
APPLE-1014	J.A. Scarlett, THE MULTILAYER PRINTED CIRCUIT BOARD HANDBOOK (1985) (selected excerpts)

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CLAIM LISTING

Element	Claim Language
[1.P]	A physiological sensor comprising:
[1.1]	a plurality of emitters configured to transmit optical radiation having a plurality of wavelengths in response to a corresponding plurality of drive currents, the plurality of emitters including a substrate;
[1.2]	a thermal mass disposed proximate the emitters and within the substrate so as to stabilize a bulk temperature for the emitters; and
[1.3]	a temperature sensor thermally coupled to the thermal mass,
[1.4]	wherein the temperature sensor provides a temperature sensor output responsive to the bulk temperature so that the wavelengths are determinable as a function of the drive currents and the bulk temperature.
[2]	The physiological sensor according to claim 1 wherein the substrate has a first side and a second side, wherein the emitters are mounted to the first side, and wherein the temperature sensor is mounted to the second side.
[3]	The physiological sensor according to claim 2 wherein the temperature sensor is a thermistor and the emitters are LEDs.
[4]	The physiological sensor according to claim 3: wherein the thermal mass is a plurality of layers of the substrate.
[5]	The physiological sensor of claim 4 wherein each of the layers of the thermal mass is substantially copper clad.
[6]	The physiological sensor according to claim 1: wherein the thermal mass is disposed within the substrate proximate the light emitting sources and the temperature sensor.
[7.P]	A physiological sensor capable of emitting light into tissue and producing an output signal usable to determine one or more

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