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**(71) Applicant(s):**

GENERAL ELECTRIC COMPANY [US/US]; 1 River Road Schenectady, NY 12345 (US) *(for all designated states except US)*

LEE, Boon, Kwee [MY/US]; 36 Willowbrook Terrace Clifton Park, NY 12065 (US) *(for US only)*

GUIDA, Renato [US/US]; 620 Church Street Wynantskill, NY 12198 (US) *(for US only)*

WU, Juntao [CN/US]; 1333 Hawthorn Road Niskayuna, NY 12309 (US) *(for US only)*

KRAEMER, Sebastian, Gerhard, Maxim [DE/DE]; Richard-Strauss-Str. 40 81677 Muenchen (DE) *(for US only)*

DEKATE, Sachin, Narahari [IN/US]; 602 Connor Court Niskayuna, NY 12309 (US) *(for US only)*

**(72) Inventor(s):**

LEE, Boon, Kwee; 36 Willowbrook Terrace Clifton Park, NY 12065 (US)

GUIDA, Renato; 620 Church Street Wynantskill, NY 12198 (US)

WU, Juntao; 1333 Hawthorn Road Niskayuna, NY 12309 (US)

KRAEMER, Sebastian, Gerhard, Maxim; Richard-Strauss-Str. 40 81677 Muenchen (DE)

DEKATE, Sachin, Narahari; 602 Connor Court Niskayuna, NY 12309 (US)

**(74) Agent(s):**

ZHANG, Douglas, D.; General Electric Company Global Patent Operation 2 Corporate Drive, Suite 648 Shelton, CT 06484 (US)

**(54) Title (EN):** FIBER OPTIC CURRENT SENSING SYSTEM WITH TEMPERATURE COMPENSATION

**(54) Title (FR):** SYSTÈME DE DÉTECTION DE COURANT À FIBRE OPTIQUE AVEC COMPENSATION DE TEMPÉRATURE

**(57) Abstract:**

**(EN):** A fiber optic sensor system employs at least one light source that operates to generate light having one or more desired wavelengths. A first optical fiber based sensor transparent to a desired light wavelength operates to sense a magnetic field emitted from a predetermined electrical conductor or a current flowing through the electrical conductor. A temperature sensor that may be another optical fiber based sensor operates to sense an operating temperature associated with the first optical fiber based sensor in response to the light generated by the light source. Signal-processing electronics adjust the sensed current to substantially compensate for temperature induced errors associated with the sensed current in response to the measured operational temperature of the fiber optic sensor.

**(FR):** L'invention porte sur un système de capteur à fibre optique qui emploie au moins une source de lumière qui fonctionne pour générer de la lumière ayant une ou plusieurs longueurs d'onde désirées. Un premier capteur à fibre optique, transparent à une longueur d'onde de lumière désirée, fonctionne pour détecter un champ magnétique émis par un conducteur électrique prédéterminé ou un courant circulant à travers le conducteur électrique. Un capteur de température, qui peut être un autre capteur à fibre optique, fonctionne pour détecter une température de fonctionnement associée au premier capteur à fibre optique en réponse à la lumière générée par la source de lumière. Une électronique de traitement de signal ajuste le courant détecté pour compenser sensiblement

les erreurs induites par la température, associées au courant détecté, en réponse à la température de fonctionnement mesurée du capteur à fibre optique.

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European Patent Office (EPO) : 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, SE, SI, SK, SM, TR

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African Regional Intellectual Property Organization (ARIPO) : BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW

Eurasian Patent Organization (EAPO) : AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

**Declarations:**

Declaration made as applicant's entitlement, as at the international filing date, to apply for and be granted a patent (Rules 4.17(ii) and 51bis.1(a)(ii)), in a case where the declaration under Rule 4.17(iv) is not appropriate

Declaration made as applicant's entitlement, as at the international filing date, to claim the priority of the earlier application, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii))