

Accepted Manuscript

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Author: Górriz B. Torres I. Payá-Zaforteza P.A. Calderón
García S. SalesMaicas



PII: S0924-4247(16)31133-5
DOI: <http://dx.doi.org/doi:10.1016/j.sna.2016.12.013>
Reference: SNA 9944

To appear in: *Sensors and Actuators A*

Received date: 1-6-2016
Revised date: 5-12-2016
Accepted date: 12-12-2016

Please cite this article as: Górriz B.Torres, I.Payá-Zaforteza, P.A.Calderón García, S.SalesMaicas, New fiber optic sensor for monitoring temperatures in concrete structures during fires, Sensors and Actuators: A Physical <http://dx.doi.org/10.1016/j.sna.2016.12.013>

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TÍTULO:

New fiber optic sensor for monitoring temperatures in concrete structures during fires

Torres Górriz B. (1), Payá-Zaforteza I. (1), Calderón García PA. (1), Sales Maicas, S. (2).

1 Universitat Politècnica de València. Instituto de Ciencia y Tecnología del Hormigón. Valencia, España.

2 Universitat Politècnica de València. Instituto de Telecomunicaciones y Aplicaciones Multimedia. Valencia, España.

Email: btorres@cal-sens.com / igpaza@cst.upv.es / pcaldero@cst.upv.es / ssales@dcom.upv.es

Highlights (max 85 characters, including spaces, per highlight)

- A new fiber optic sensor for monitoring high temperatures is proposed.
- The new sensor is based on the use of Regenerated Fiber Bragg Gratings.
- Sensors were embedded in a loaded concrete beam and subjected to a fire test.
- The maximum temperatures measured by the sensors were over 950°C.
- Sensor measurements were checked by numerical simulations and thermocouples.

Abstract.

Monitoring temperatures in structures during fires provides valuable information to 1) the firemen engaged in extinguishing it, 2) those who assess its security, and 3) the organizations who have to decide on its possible repair, renovation or demolition. Developing sensors able to measure extremely high temperatures in actual blaze conditions is therefore a fundamental requirement.

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