

**Title:** Halting the fuse discharge propagation using optical fiber microwires

**Author(s):** Rocha, A. M.<sup>1,2</sup>; Fernandes, G.<sup>1</sup>; Domingues, F.<sup>1,2</sup>; **Niehus, M.**<sup>1,3</sup>; Pinto, A. N.<sup>1,4</sup>; Facao, M.<sup>2,5</sup>; André, P. S.<sup>1,2</sup>

**Source:** Optics Express **Volume:** 20 **Issue:** 19 **Pages:** 21083-21088 **Published:** Sep 10 2012

**Document Type:** Article

**Language:** English

**Abstract:** We report and analyze the halting of the fuse effect propagation in optical fiber microwires. The increase of the mode field diameter in the tapered region decreases the optical intensity resulting in the extinction of the fuse effect. This fiber element presents a low insertion loss and can be introduced in the optical network in order to protect the active equipment from the damage caused by the fuse effect. (C) 2012 Optical Society of America

**KeyWords Plus:** Destruction; Damage

**Reprint Address:** Rocha, AM (reprint author), Inst Telecomunicacoes, Campus Santiago, P-3810193 Aveiro, Portugal.

**Addresses:**

1. Inst Telecomunicacoes, P-3810193 Aveiro, Portugal
2. Univ Aveiro, Dept Phys, P-3810193 Aveiro, Portugal
3. ISEL, Dept Elect Telecommunicat & Comp, P-1959007 Lisbon, Portugal
4. Univ Aveiro, Dept Elect Telecommun & Informat, P-3810193 Aveiro, Portugal
5. Univ Aveiro, I3N, P-3810193 Aveiro, Portugal

**E-mail Address:** amrocha@ua.pt

**Funding:**

Funding Agency	Grant Number
Portuguese Scientific Program	
European Union	PTDC/EEA-TEL/72025/2006 PTDC/EEA-TEL/105254/2008
A. M. Rocha PhD grant	SFRH/BD/41773/2007
M. Niehus BPD grant	SFRH/BPD/45824/2008

**Publisher:** Optical Soc Amer

**Publisher Address:** 2010 Massachusetts Ave NW, Washington, DC 20036 USA

**ISSN:** 1094-4087

**Citation:** Rocha A M, Fernandes G, Domingues F, Niehus, M, Pinto A N, Facao M, André P S. Halting the fuse discharge propagation using optical fiber microwires. Optics Express. 2012; 19 (20): 21083-21088.