



## DEVICE CHARACTERISATION

### **Measuring Differential Group Delay and Distributed Scattering in Few Mode Fibers for Mode Division Multiplexing**

J.W. Nicholson, L. Grüner-Nielsen, K. Jespersen, Y. Sun, R. Lingle, D. Jacobsen, and B. Pálsdóttir  
Proceedings of Photonics West, (Invited) paper 8647-10, 2013

### **Measurement of Spatial and Polarization Birefringence in Two-Mode Elliptical Core Fibers**

Tommy Geisler, Martin E. Pedersen, Søren Herstrøm  
OFC2013, paper OW1K.3

### **Few-Mode Fibers for Mode-Division Multiplexing**

Y. Sun, R. Lingle Jr., A. McCurdy, D. Peckham, R. Jensen and L. Grüner-Nielsen  
Proceedings of IEEE Photonics Society 2013 Summer topical meeting, (Invited) paper MC3.1

### **Frozen capillary waves on glass surfaces: The impact of a flow**

Brun C., Ciccotti M., Tessier G., Vandembroucq D.  
23rd International Conference on Glass, Prague 1-5 July 2013

### **Experimental verification of four wave mixing efficiency characteristics in a few mode fibre**

N. Mac Suibhne, A.D. Ellis, F.C. Garcia Gunning, S. Sygletos  
ECOC 2013, paper P1.14

### **Demonstration of a 2um-OTDR**

M. Belal, S.U. Alam, J.K. Sahu, D.J. Richardson and T.P. Newson  
ECOC 2013, paper Tu.1.A.3

### **Measuring Distributed Mode Scattering in Long, Few-Moded Fibers**

Kim Jespersen, Z. Li, Lars Gruner-Nielsen, Bera Palsdottir, Francesco Poletti, and Jeffrey W. Nicholson  
Optical Fiber Communication Conference (OFC 2012), Paper OTh3I.4



*We present measurements of higher-order modes in lengths of few-moded fibers up to 0.5 km long using Spatially and Spectrally resolved (S2) imaging. Both discrete scattering events and mode-mixing due to distributed scattering are measured.*

<http://eprints.soton.ac.uk/335734/1/5364.pdf>

**Complementary analysis of modal content properties in a 19-cell hollow core photonic band gap fiber using Time-of-Flight and S2 techniques**

D.R.Gray, Z.Li, F.Poletti, R.Slavik, N.V.Wheeler, M.N.Petrovich, A.Obeysekara, D.J.Richardson

European Conference on Optical Communication (ECOC) Amsterdam 16-20 Sept 2012 Mo.2.F.1

*We study the rich multimode content of an ultra-low loss hollow core photonic bandgap fiber using two complementary techniques which allow us to investigate both short and long propagation distances. Several distinct vector modes are clearly identified, with evidence of low intermodal coupling and distributed scattering.*

**Method to Visualise and Measure Individual Modes in a Few Moded Fibre**

Ian Giles, Asiri Obeysekara, Francesco Poletti, David Richardson

ECOC'12, paper Tu.1.F.5

*Coupling between the propagating modes and radiation modes of a FMF enables separation and measurement of the properties of the light in each mode independently. A method using prism coupling from a side-polished fibre is described to access and select individual modes.*

**Stable Mode Converter for Conversion between LP01 and LP11 Using a Thermally Induced Long Period Grating**

L. Grüner-Nielsen, J. W. Nicholson

SUM 2012 IEEE Photonics Society Summer Topical Meeting on Space Division Multiplexing for Optical Systems and Networks, paper WC1.2

*A new method for making long period gratings for coupling between symmetric and asymmetric modes is presented. Good stability compared to traditionally mechanical long period gratings, high coupling efficiency and low insertion loss is demonstrated.*

<http://dx.doi.org/10.1109/PHOSST.2012.6280803>

**Measuring Distributed Mode Scattering in Few Mode Fibers with High and Low Differential Group Delay**

L. Grüner-Nielsen, J.W. Nicholson, K. Jespersen, Y. Sun, R. L. Lingle, D. Jakobsen and B. Palsdottir



Proceedings of IEEE Photonics Society 2012 Summer topical meeting, paper TuC1.3.

*We present measurements of distributed mode scattering in up to 30km long few mode fibers using spatially and spectrally resolved (S<sub>2</sub>) imaging.*

<http://dx.doi.org/10.1109/PHOSST.2012.6280768>