Dr Francesca Parmigiani

Optoelectronics Research Centre

University of Southampton

SO171BJ

Email: frp@orc.soton.ac.uk

The data for the corresponding figures of the paper: F. Parmigiani et al., “All-optical mode and wavelength converter based on parametric processes in a three-mode fiber”, Optics Express, are given in the attachment.

The first page of excel reports the data for Figure 2 (b) (Figure 1 is a schematic figure and Fig. 2(a) is set-up figure and for this reason no information is uploaded), reporting the impulse responses data with selective mode excitation of the LP11a, LP01, and LP11b modes, respectively, in the EC-FMF using a time of flight measurement set-up.

The second page of excel reports the mode-demultiplexer spectra of LP01 port and LP11a port for P1 and S equal to 1537.4 nm or 1537.9 nm, respectively, and P2 equal to 1557.3 nm, 1562.4 nm, 1567.13 nm, and 1578 nm, respectively, when P1 and S excite the LP01 mode of the fiber and P2 excites the LP11a mode. These results correspond to Fig. 3 in the paper.

The third page of excel reports the measured and simulated conversion efficiencies of the PC and BS processes versus Signal to Pump 1 wavelength detuning, when the other pump excites the second mode (LP11a) of the fiber at different wavelengths around the phase matching condition, i.e. P1=1537.4 nm, whileP2=1561.3 nm (-1 nm from PM), P2=1562.4 nm (at PM) and P2=1563 nm (+0.6 nm from PM). These results correspond to Fig. 4 in the paper.

The four page of excel reports the measured and simulated conversion efficiencies of the BS and PC processes versus signal to P1 wavelength detuning, when the other pump excites the second mode (LP11a) of the fiber detuned of about -3 nm (top row) and +3 nm (bottom row) from the phase matching condition (i. e. P2=1562.4 nm). These results correspond to Fig. 5 in the paper.

The fifth and last page of the excel reports the mode-demultiplexer spectra of LP01 port and LP11b port for P1 and S equal to 1537.4 nm or 1537.9 nm, respectively, and P3 equal 1562.4 nm, 1573 nm, 1578 nm or 1583 nm, respectively, when P1 and S excite the LP01 mode of the fiber and P3 excites the LP11b mode. Conversion efficiency of the BS and PC processes at the phase matched wavelengths versus the signal to Pump1 wavelength detuning are also reported. These results correspond to Fig. 6 in the paper.