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Production and characterization of refractive index gratings in high-birefringence fibre optics

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#### Abstract

In this work, we report production and modelling of both Bragg gratings and rocking filters in high birefringence fibre optics. Bragg gratings are produced by UV (257.0 nm) external interferometric exposition of a frequency-doubled Ar<sup>+</sup> ion laser, whereas for rocking filters formation the visible Ar<sup>+</sup> ion laser lines in 488.0 and 514.5 nm are used in an internal method. The spectral characteristics due to the birefringence properties are studied through numerical methods and experimental techniques. The spectral responsivity of the structures under temperature changes and stress application is presented.

Author Keywords: Bragg grating; Rocking filter; Birefringent fibres; Sensors