Plasma-Based Optical Fiber Tapers and Sensing Applications

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Optical fiber taper techniques have evolved for more than 35 years, with intrinsic advantages and disadvantages. In house, we have recently developed a simple, yet effective plasma-based technique for optical fiber taper manufacturing with precision, high-repeatability, low-losses and mechanical stability. Our presentation will describe the experimental rig, the main results for adiabatic and non-adiabatic tapers, their optical characterization and real applications as torsion, vibration, temperature and refractive index sensors.