Moiré phase-shifted fiber Bragg gratings in polymer optical fibers

We demonstrate a simple way to fabricate phase-shifted fiber Bragg grating in polymer optical fibers as a narrowband transmission filter for a variety of applications at telecom wavelengths. The filters have been fabricated by overlapping two uniform fiber Bragg gratings with slightly different periods to create a Moiré grating with only two pulses (one pulse is 15 ns) of UV power. Experimental characterization of the filter is provided under different conditions where the strain and temperature sensitivities were measured.