Continuously tunable solution-processed organic semiconductor DFB lasers pumped by laser diode.

The fabrication and characterization of continuously tunable, solution-processed distributed feedback (DFB) lasers in the visible regime is reported. Continuous thin film thickness gradients were achieved by means of horizontal dipping of several conjugated polymer and blended small molecule solutions on cm-scale surface gratings of different periods. We report optically pumped continuously tunable laser emission of 13 nm in the blue, 16 nm in the green and 19 nm in the red spectral region on a single chip respectively. Tuning behavior can be described with the Bragg-equation and the measured thickness profile. The laser threshold is low enough that inexpensive laser diodes can be used as pump sources.