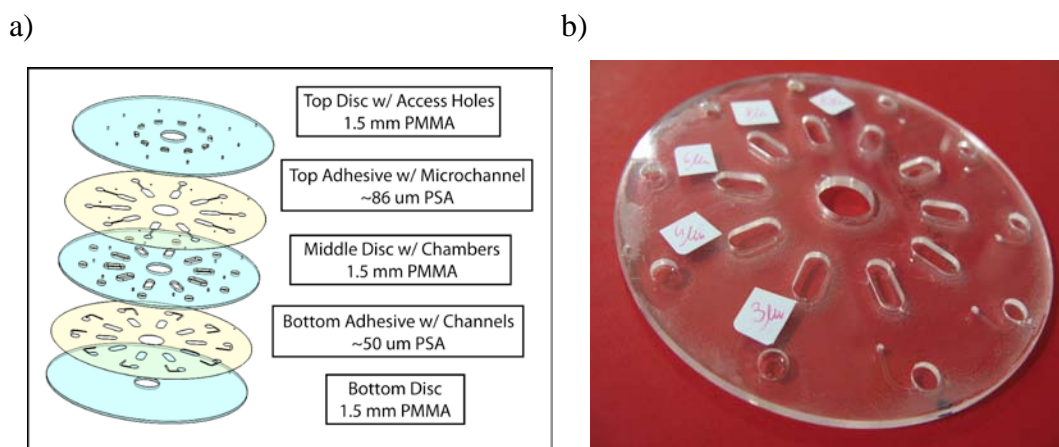
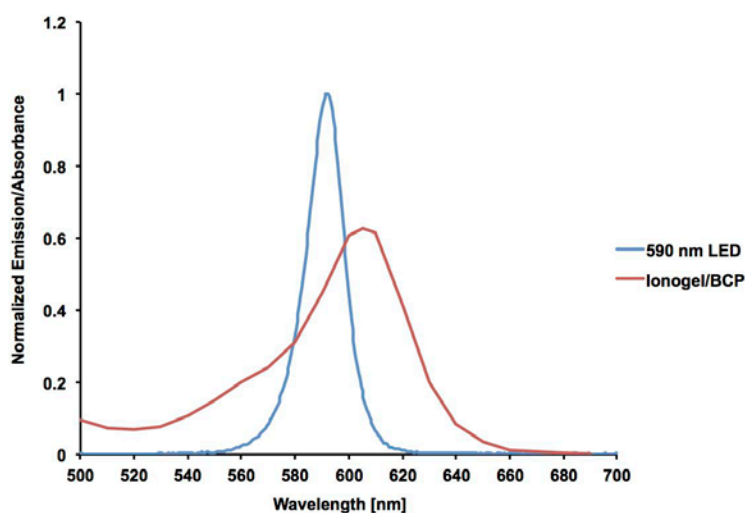


Novel optical sensing system based on wireless paired emitter detector diode device for Lab-on-a-Disc water quality measurements

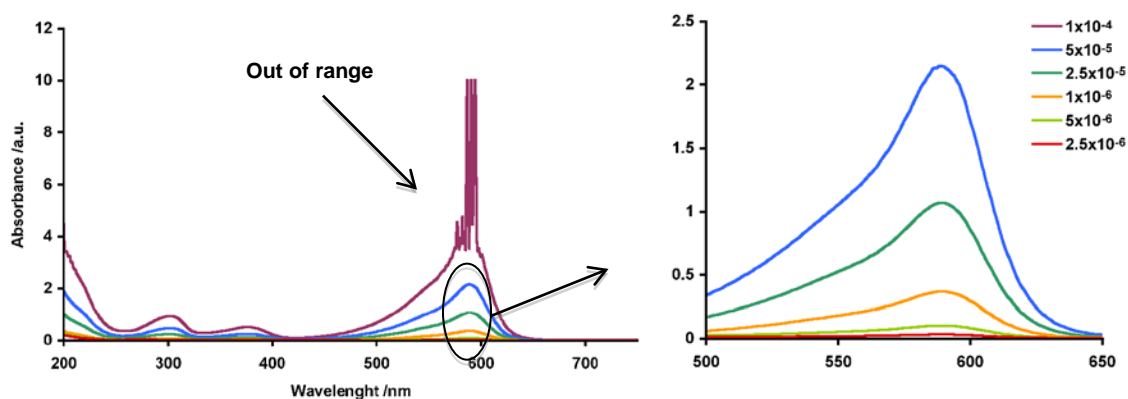
Monika Czugała, Robert Gorkin, Thomas Phelan, Jennifer Gaughran, Vincenzo Fabio Curto, Jens **Ducrée**, Dermot Diamond and Fernando Benito-Lopez



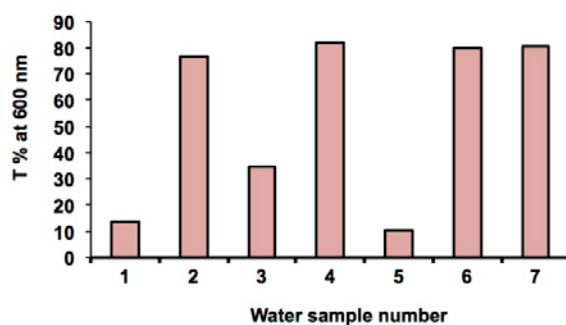
SI-Fig. 1. a) Scheme showing the assembly of the centrifugal disc used for the characterisation of the PEDD optical system; b) picture of the disc with milled microfluidics.



SI-Fig. 2. Emission spectrum (blue line) of the emitter LED (λ_{max} 590 nm) and the absorption spectra of Bromocresol Purple (red line) in a basic environment.



SI-Fig. 3. UV-Vis spectra of bromocresol purple pH dye, at different concentrations. The spectra show that bromocresol purple is quantitatively detected in the range 2.5×10^{-6} - 5×10^{-5} M using a UV-Vis spectrometer, $L = 1$ cm.



SI-Fig. 4. Quantitative turbidity measurements using a UV-Vis spectrometer (transmittance).