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Improving the ensemble optical properties of InP quantum dots by indium precursor modification

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ELECTRONIC SUPPLEMENTARY INFORMATION

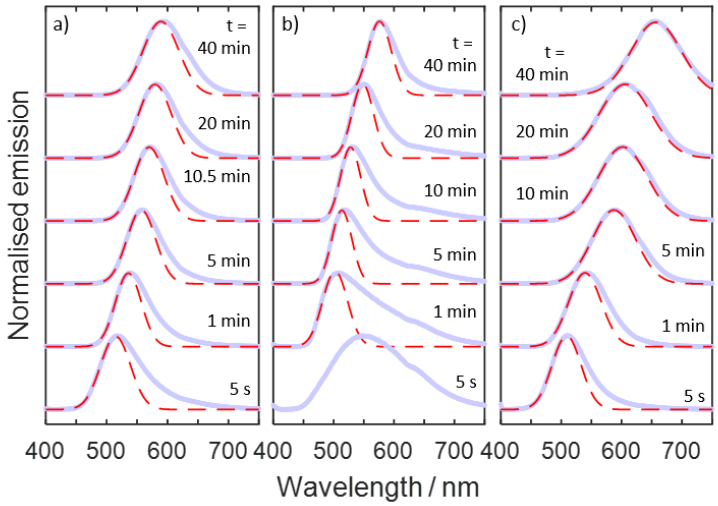

Fig S1. Normalised emission spectra for the standard (a), InTOP (b), and control (c) methods. The solid lines indicate the measured spectra, while the dashed lines indicate Gaussian functions fitted to the high-energy side of the band-edge emission peaks ($\lambda \leq \lambda_{max}$). Peak wavelengths and full width half maxima reported elsewhere in the paper were obtained from the Gaussian fits.

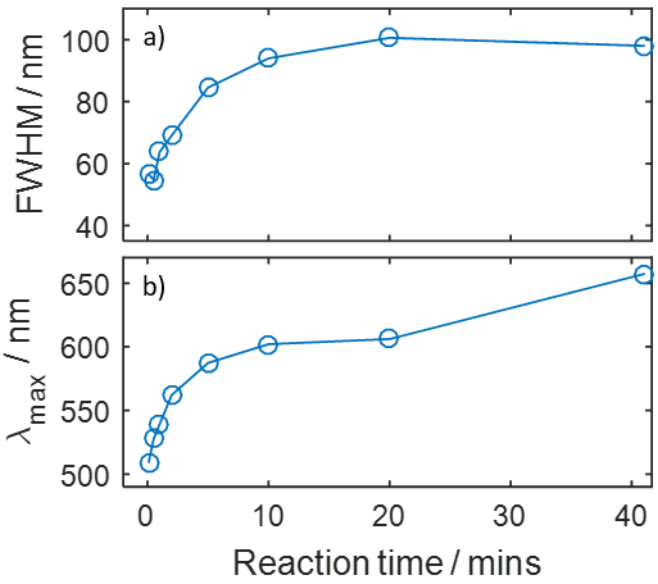

Fig S2: Time evolution of the full width half maximum (FWHM) (a) and peak wavelength (λ_{max}) (b) of the band-edge emission from InP quantum dots obtained from the control method, in which the amine and zinc additives were moved to the phosphorus precursor solution. The peak wavelength and full width half maximum values were obtained by fitting a Gaussian to the high-energy side of the emission peaks as shown in ESI Fig S1. The emission line-widths obtained using the control method were substantially higher than those obtained using the standard and InTOP methods.

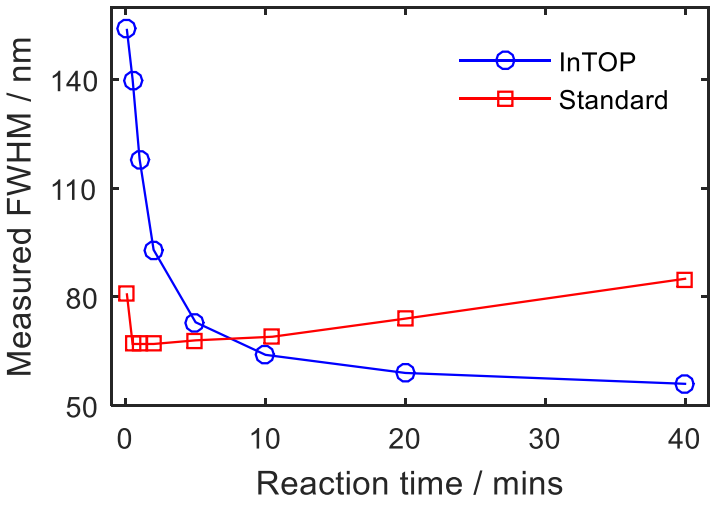

Fig S3: Time evolution of the full width half maximum (FWHM) of the measured emission from InP quantum dots obtained from the standard and InTOP methods. The InTOP-derived quantum dots show a steady decrease in FWHM with increasing reaction time due to a steady decrease in the fractional contribution from (broad) defect emission.