**A ‘mild’ method to make high-quality InP quantum dots**

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Colloidal indium phosphide (InP) quantum dots are an attractive alternative to the frequently studied and used cadmium selenide (CdSe) ones. They luminesce in a similar range of the visible spectrum while being much less toxic. However, synthesis methods that result in high-quality InP quantum dots require tris-trimethylsilylphosphine ((TMS)3P) as a reagent.1–3 Unfortunately, (TMS)3P is not commercially available in some countries including Australia and New Zealand. This makes the synthesis of high-quality InP quantum dots extremely difficult for researchers in these countries. Recently, Song *et al.* and Tessier *et al.* described a new synthesis method that does not require (TMS)3P, thus allowing Aussis and Kiwis to fabricate InP quantum dots.4,5 Compared with the more hazardous methods mentioned above, the new synthesis results in particles of moderate optical quality and the synthesis mechanism is poorly understood.6,7 We present an experimental and theoretical (DFT) study that aims at elucidating the synthesis mechanism of InP quantum dots using the non-(TMS)3P route.

Our study enabled us to explain the role of zinc salts in the InP quantum dot synthesis and then modifying the standard synthesis method taking the learnings from the theoretical calculations into account. The resulting InP quantum dots are of unprecedented quality using this method, and do not even require a glove-box for their preparation.

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