be narrower than the limit set
ow–Townes formula. As well
attractive uses in for example
cations, these results show even
the first demonstration of a laser
ndamental insight into lasers
ined.

g the drugs

Int. Ed.
nie.201000097 (2010)

yl compounds are increasingly
for use as anticancer agents. An
ject of the work is to look at the
listribution of the compound
how this changes over time.
er and colleagues have now used
ional Raman microspectroscopy
uptake and distribution of
$O)_3$]Cl (tpm = *tris*(1-pyrazolyl)
human colon cancer cells.
-ray fluorescence or atomic
ectroscopy have been used
l complexes in cells; however,
om drawbacks including the
cell damage and unwanted

encapsulated dyes for at least 14 days, both *in vitro* and *in vivo*, and shows promising biocompatibility. The multicomponent nature of the system offers many ways to tune drug content and release: for example, by varying drug loading, liposomal and microbubble concentration and the intensity or duration of the ultrasound pulse. The researchers predict that the material could be well suited for drug delivery when high concentrations are required, such as in local anaesthesia.

interaction — a mechanism that relies on the presence of a water-soluble polymer (the depletant) and the favourable entropic interactions that result. Binding and unbinding of the particles can be controlled by changing the depletant concentration and, if an appropriate depletant is used, by varying the temperature. Sacanna *et al.* show the versatility of the method by making dimers, trimers (pictured) and chain-like assemblies.

Dotted wires

Nano Lett. doi:10.1021/nl903534n (2010)

The atomic-like optical emission from self-assembled quantum dots (QDs) embedded in semiconductor devices is promising for several applications in optoelectronics. QDs are usually nanoclusters of one semiconductor embedded in a matrix of a different material. However, Nika Akopian and colleagues have now demonstrated that QDs can also be obtained in a structure composed of a single material, namely InP nanowires. A nanowire can exhibit both wurtzite and zinc-blende segments. Interestingly, the valence and conduction bands are misaligned in the two phases, so that small sections of zinc-blendes within wurtzite are effectively QDs for electrons. The team showed that such 'crystal phase' quantum dots can work as single photon emitters, when confined electrons recombine with holes in the adjacent wurtzite matrix. The possibility of using clean QD structures, free from defects and with sharp interfaces will be very beneficial for various optoelectronic applications.