

## Surface compositional gradients of InAs/GaAs quantum dots

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With laterally resolved photoemission spectroscopy, we obtained In and Ga surface concentration maps of InAs/GaAs quantum dots. Our data demonstrate that the dot composition is neither pure InAs nor homogeneous  $\text{In}_x\text{Ga}_{1-x}\text{As}$ , but presents an In concentration increasing from the borders to the center of the dots. Besides, our observations suggest strong In segregation ( $x \sim 0.9$ ) on the surface of the dots and of the surrounding wetting layer. Such segregation, well known for two-dimensional InAs/GaAs growth, had not been directly observed so far on the dots, and should be taken into account to model size and composition of GaAs-overgrown structures. Furthermore, the morphological properties of the dots such as size and density have been measured with plan-view transmission electron and low energy electron microscopy.