

**Photoluminescence studies of type-II
InP/GaAs self-organized quantum dots**

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Self-organized InP quantum dots having a staggered band lineup (type-II) are formed in a GaAs matrix by MOCVD. Strong photoluminescence centred at 1.244 eV is observed at low temperature for the sample with about 4- monolayer InP deposition, which can be attributed to radiative recombination of zero-dimensional (0D) electrons located in the InP dots and holes located in the surrounding GaAs regions. The type-II recombination of nonequilibrium carriers has been confirmed by the measurement of luminescence at different excitation densities and temperatures. Bimodal dot size distributions are identified in the structures by means of photoluminescence. Radiative recombination behaviors of the type-II quantum dots have been investigated in a wide temperature range.