

Condensation and macroscopic ordering in cold exciton gases

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Bound electron-hole pairs - excitons - are Bose particles with small mass. Exciton Bose-Einstein condensation is expected to occur at a few degrees Kelvin - a temperature many orders of magnitude higher than for atoms. Experimentally, an exciton temperature well below 1 Kelvin is achieved in coupled quantum well semiconductor nanostructures. We will review the problem of exciton condensation and report on new experiments, revealing bosonic stimulation of exciton scattering and exciton condensation in potential traps. Novel experiments with pattern formation in exciton system and macroscopically ordered exciton state will also be presented.