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Power dependent spectral diffusion in single CdSe quantum dots Y. SHEN, L. PANG, K. TETZ, Y. FAINMAN, Department of Electrical and Computer Engineering, University of California, San Diego, M. GRISWOLD, SEN YANG, L.V. BUTOV, L.J. SHAM, Department of Physics, University of California, San Diego — Optical emission from a single CdSe quantum dot was investigated. We studied spectral diffusion effects which were observed earlier[1]. We found that the spectral diffusion characteristic frequency increases with the pump power. In addition, increasing laser pump power causes occurrence of additional emission lines. The measured correlations show that the lines correspond to multiparticle complexes. The physics describing these effects is analyzed. [1]S. A. Empedocles, D. J. Norris, and M. G. Bawendi, Phys. Rev. Lett. 77, 3873 (1996).

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