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Strongly-bound excitons and trions in anisotropic 2D semiconductors Sangho Yoon^{1,2†}, Taeho Kim^{1,2†}, Seung-Young Seo^{1,2}, Seung-Hyun Shin³, Su-Beom Song^{1,2}, B. J. Kim^{2,3}, Kenji Watanabe⁴, Takashi Taniguchi⁵, Gil-Ho Lee³, Moon-Ho Jo^{1,2}, Diana Y. Qiu^{6*}, Jonghwan Kim^{1,2,3*}
¹ Department of Materials Science and Engineering, Pohang University of Science and

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Low-Dimensional Semiconductors in Artificial ...

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Excitons in Low-Dimensional Semiconductors - Toc

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10. Excitons in Bulk and Two-dimensional Semiconductors

Excitons - an overview | ScienceDirect Topics

The author develops the effective-mass theory of excitons in low-dimensional semiconductors and describes numerical methods for calculating the optical absorption including Coulomb interaction, geometry, and external fields. The theory is applied to Fano resonances in low-dimensional semiconductors and the Zener breakdown in superlattices.

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Carsten Deibel, in Semiconductors and Semimetals, 2011. 2.3 Charge Transfer and Energy Transfer. Singlet excitons can be dissociated into polarons—charges leading to an ultrafast reorganization of the nonrigid organic molecules on which they reside—by charge transfer. Thus, only one of the two constituents of an exciton, electron or hole, migrate to another molecule. Low-dimensional semiconductors provide a marvelous platform for pursuing ver-

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PACS. 78.66.-w Optical properties of specific thin films, surfaces, and low-dimensional structures-71.35.-y Excitons and related phenomena - 71.36.+c Polaritons (including photon-phonon and ...

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