

Abstract Submitted
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Impurity effects in excitonic insulators¹ JIAN LI, Texas Center for Superconductivity, University of Houston, Houston, Texas 77204, NINGNING HAO, Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, PR China, BEIJING NATIONAL LABORATORY FOR CONDENSED MATTER PHYSICS TEAM — Both non-magnetic and magnetic impurity effects in spin singlet and triplet excitonic insulators were investigated. The bound state energies caused by single impurity were given. The different compositions of the bound states can be used to detect the symmetry of the excitonic insulators. In finite concentration problems, nonmagnetic impurities showed same pair-breaking effect in singlet and triplet excitonic insulators while magnetic impurities showed weaker pair-breaking effect in triplet excitonic insulators than in singlet ones. The pair-breaking effects suppressed the ferromagnetic range via doping and gave a natural explanation for experimental results.

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