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The carrier recombination in ZnO/Al_2O_3 superlattice KO MAI, WEI-SHENG CHEN, TSU-CHIANG YEN, DER-JUN JANG, YUNG-SUNG CHEN, Department of Physics, National Sun Yat-sen University — The optical properties of ZnO/Al_2O_3 superlattice are studied by a time-correlated single-photon counting apparatus with temporal resolution of 150 ps using laser pulses of energy 4.5 eV from a Ti:sapphire laser. Photoluminescence emission around 550 nm is clear evident for photoexcitation with energies of 3.0 and 4.5 eV. The differences of the widths of the PL spectrum and lifetimes of carrier recombination are compared for both photoexcitation and are explained by the spatial overlap of the carriers inside the superlattices

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