

Abstract Submitted
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Dispersive resonance bands within the space charge layer of metal- semiconductor junction SHU-JUNG TANG, National Tsing Hua University, TAY- RONG CHANG, CHIEN-CHUNG HUANG, CHANG-YEH LEE, CHENG-MAW CHENG, KU-DING TSUEI, H. -T. JENG, CHUNG-YU MOU — Based on measurements of angle resolved photoemission, we report that in the Pb/Ge(111)- $\sqrt{3} \times \sqrt{3}$ R30° structure, in addition to three bands resembling Ge bulk band edges, a fourth dispersive band resembling the non split off (NSO) band is found near the surface zone center. While three Ge bulk-like bands get distorted due to strong coupling between Pb and Ge, the NSO-like band gets weaker and disappears for larger thickness of Pb, which, when combined with ab initio calculations, indicates its localized nature within space charge layer. Our results are clearly important for designing electronics involved with metal-semiconductor contacts

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