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Point contact spectroscopy (PCS) on the Fe122 pnictides and Fe11 chalcogenides H.Z. ARHAM, C.R. HUNT, W.K. PARK, L.H. GREENE, U. Illinois, U-C, J. GILLETT, S. SEBASTIAN, U. Cambridge, Z.J. XU, J.S. WEN, Z.W. LIN, Q. LI, G. GU, BNL, A. THALER, S.L. BUDKO, P.C. CANFIELD, Ames Lab., ISU — We present PCS results on $Ba(Fe_{1-x}Co_x)_2As_2$ and $Fe_{1+y}Te$. The superconducting (S) crystals (x=0.08) show multigap like Andreev peaks. The non-S crystals (x=0.015, y=0.03) also show a conductance enhancement with split peaks at low temperatures (T). This conductance enhancement does not match with the bulk antiferromagnetic (AFM) transition T and survives up to 90 K for y=0.03 (T_N ∼69 K) and 130 K for x=0.015 (T_N ∼115 K). For the S samples in the coexisting regime (x=0.05 & 0.055), in addition to the Andreev peaks below T_C, a zero bias conductance enhancement develops and survives for ∼5K above T_C. PCS detects conductance changes due to quasiparticles scattering off charge or spin ordering. These conductance enhancements may arise from orbital ordering as detected by photoemission spectroscopy[1] and AFM ordering (Q-scattering), respectively.[2] [1]Yi et.al, arXiv:1011.0050. [2]Bobkova et.al, PRL 94, 037005 (2005). UIUC work supported by NSF-DMR-0706013, U.S. DOE Award No.DE-AC02-98CH10886, BNL work by DOE Award No.DE-AC0298CH10886, Cambridge work by EPSRC, Trinity College, the Royal Society, the Commonwealth Trust. Ames Lab operated by ISU under DOE Contract No.DE-AC02-07CH11358.

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