Abstract Submitted
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Scanning tunneling spectroscopy study of electric-pulse-induced electronic inhomogeneities in $GaTa_4Se_8$ VINCENT DUBOST, University of Paris, CRISTIAN VAJU, Institut des Materiaux Jean Rouxel, TRISTAN CREN, University of Paris, BENOIT CORRAZE, Institut des Materiaux Jean Rouxel, FRANCOIS DEBONTRIDDER, University of Paris, ETIENNE JANOD, Institut des Materiaux Jean Rouxel, DIMITRI RODITCHEV, University of Paris, LAURENT CARIO, Institut des Materiaux Jean Rouxel, INSP DISPOSITIFS QUANTIQUES CONTROLLES TEAM, IMN-PMN-MATERIAUX A PROPRIETES ELECTRONIQUES NON-CONVENTIONNELLES TEAM — We have recently discovered a bulk Electric Pulse Induced Insulator-Metal Transition and possible superconductivity in the cluster Mott Insulator $GaTa_4Se_8$[1]. The transport measurements, conducted on single crystals, are consistent with a two-channel model, which suggests that the electric pulse generates electronic inhomogeneities in the bulk of the samples. Our Scanning Tunneling Microscopy/Spectroscopy experiments indeed confirmed that the observed drop in the electric resistance originates from an electronic phase separation with the coexistence of metallic- like and insulating like domains at the nanometer scale [1]. [1] Vaju *et al.* Advanced Materials, **20** 2760 (2008), Microelectronics engineering *in press*, (2008)

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