

Abstract Submitted  
for the MAR13 Meeting of  
The American Physical Society

**Surface structure and electronic properties in  $\text{Ca}_{10}(\text{Pt}_4\text{As}_8)(\text{Fe}_2\text{As}_2)_5$** <sup>1</sup> JISUN KIM, GUORONG LI, AMAR KARKI, JIANDI ZHANG, RONGYING JIN, E.W. PLUMMER, Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA 70803 — Among Iron-based superconductors, a new family of  $\text{Ca}_{10}(\text{Pt}_n\text{As}_8)(\text{Fe}_2\text{As}_2)_5$  with  $n=3$  (“10-3-8”) or  $n=4$  (“10-4-8”) is unique owing to the existence of  $\text{Pt}_n\text{As}_8$  layer. This sets them with different electronic properties than the rest of Iron-based superconductors. By cleaving 10-4-8 single crystals ( $T_c \sim 34$  K) in the ultra-high vacuum, we are able to observe three surfaces: Ca layer, FeAs layer, and  $\text{Pt}_4\text{As}_8$  layer. Scanning tunneling microscope (STM) reveals both the topology and electronic density of individual layers. We discuss the implications of our results with the combination of bulk electronic properties.

<sup>1</sup>NSF DMR-1002622

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Date submitted: 28 Nov 2012

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