Optimizing Sample Preparation for Soft Point Contact Spectroscopy of Iron Pnictide Crystals\textsuperscript{1} CAILTYN MCCONNELL, OBERON WACKWITZ, DESPINA NAKOS, LUKE CONOVER, University of the Sciences, GUOTAI TAN, YU SONG, CHENGLIN ZHANG, PENGCHENG DAI, RUI ZHANG, HU DING, Rice University, ROBERTO RAMOS, University of the Sciences — Point contact spectroscopy is a widely-used technique for measuring the energy gap of superconductors. Working with iron-based pnictides, particularly K-doped iron pnictide Ba(1-x)KxFe2As2, we have made electrical contact to crystal samples obtained from collaborators by applying a small amount of silver paint using a sharp-tipped wire. We have been moderately successful using this technique and report some results of measurements here. We report progress on ongoing efforts to optimize delivery of silver paint using a more controlled way that employs micro-pipettes. We also present details of how our conductance measurements are influenced by “fritting” which is a technique of tuning the point contact region through current impulses. All measurements were performed by undergraduate students.

\textsuperscript{1}R.C.R. acknowledges support from National Science Foundation Grant DMR-1555775.

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Date submitted: 29 Sep 2017  
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