Supplementary Material

Realizing high aspect ratio silver micro and nanostructures by microcontact printing of alkyl thiol self-assembled monolayers

##### Amare Benor 1,2,[[1]](#footnote-2) Asman Tamang3, Veit Wagner3, Alberto Salleo4 and Dietmar Knipp3,4,\*

*1. Department of Physics, Bahir Dar University, Bahir Dar, Ethiopia*

*2. Department of Physics, Addis Ababa University, Addis Ababa, Ethiopia*

*3. Jacobs University Bremen, Bremen, Germany*

*4. Geballe Laboratory for Advanced Materials, Department of Materials Science and Engineering, Stanford University, Stanford, USA*

Electrical conductivity measurements and visual inspection were used to determine the etching rate.The composition of the ferri/ferrocyanide etching solution was the same for all sets of experiments and was prepared according to Ref. 1.The composition of the etching solution, ferri/ferrocyanide solution, for metal films etching was used as: K2S203 (0.1 M), K3Fe(CN)6 (0.01 M), and K4Fe(CN)6 (0.001 M). All etching of the metal films was carried out at room temperature in a ~2 cm long and 400 ml containing beaker while the etching solution is ~300 ml and stirred at ~300 rpm with a magnetic stirring bar.A plot of the etching rate as a function of the film thickness is shown in Fig. S1.The etch rate of silver and gold was determined to be ~80 nm/min and ~2 nm/min, respectively.



*Fig. S1: Etch rate of gold (left) and silver (right) films in a ferri/ferrocyanide solution.*

REFERENCES

1. H. Wu, L. Wu, X. Zhou, B. Liu, and B. Zheng, Patterning hydrophobic surfaces by negative microcontact printing and its applications, *Small*, 14, 1802128 (2018).

1. *Corresponding authors:*[*dknipp@stanford.edu*](mailto:dknipp@stanford.edu) *and* [*amarebenor@gmail.com*](mailto:amarebenor@gmail.com) [↑](#footnote-ref-2)