Title: The (001) 3C SiC surface termination and band structure after common wet chemical etching procedures, stated by XPS, LEED, and HREELS

Author: Sven Tengeler Bernhard Kaiser Gabriel Ferro Didier Chaussende Wolfram Jaegermann

PII: S0169-4332(17)32579-5
DOI: http://dx.doi.org/doi:10.1016/j.apsusc.2017.08.220
Reference: APSUSC 37057

To appear in: *APSUSC*

Received date: 25-7-2017
Revised date: 16-8-2017
Accepted date: 30-8-2017

Please cite this article as: Sven Tengeler, Bernhard Kaiser, Gabriel Ferro, Didier Chaussende, Wolfram Jaegermann, The (001) 3C SiC surface termination and band structure after common wet chemical etching procedures, stated by XPS, LEED, and HREELS, *<![CDATA[Applied Surface Science]]>* (2017), http://dx.doi.org/10.1016/j.apsusc.2017.08.220

- Piranha/NH4F, Piranha/HF, and RCA all produce clean surfaces with 1x1 surface reconstruction , and Si-OH/C-H surface termination for (001) 3C SiC
- Piranha/HF results in a small fluorine contamination of the surface
- Piranha/NH4F results in a flat band like surface situation, the other methods produce a small band bending at the 3C SiC surface (up for RCA and down for HF)
- Annealing at 900 °C for 5 minutes strongly diminishes differences from the wet chemical etching procedure and results in upward band bending