

Supplemental Information.

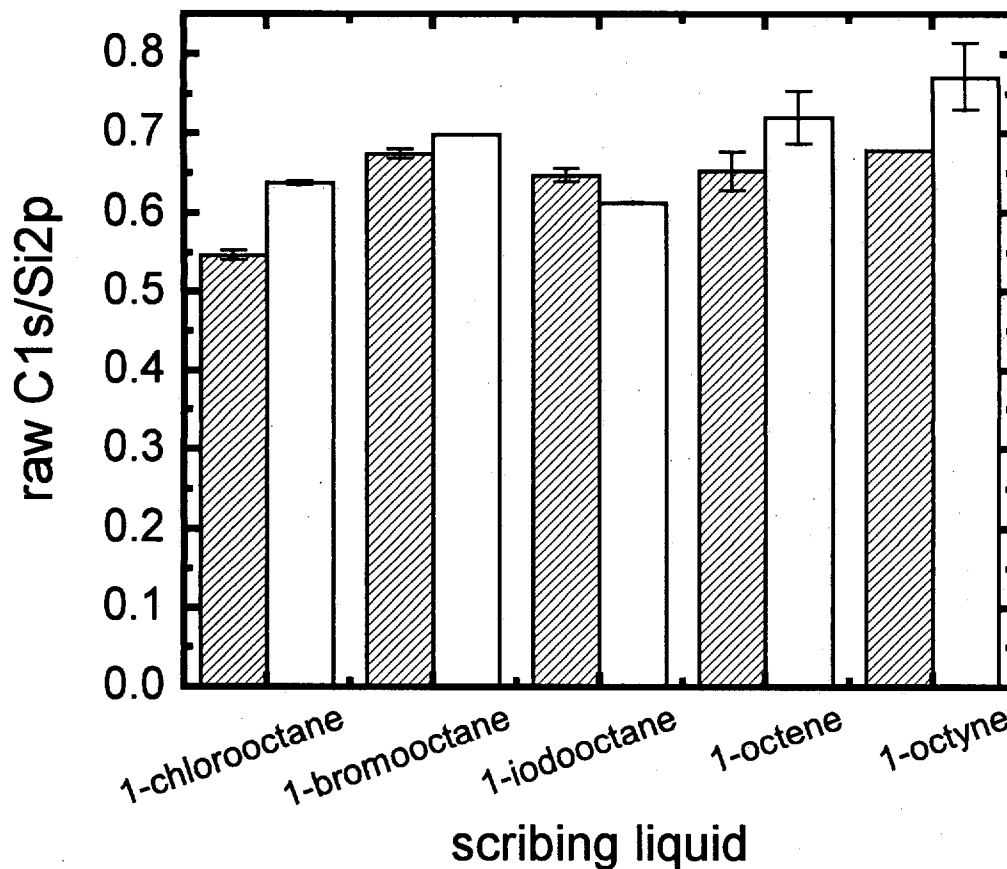


Figure 1. Ratio of the raw areas of the C1s to Si2p peaks from silicon scribed under five scribing liquids in the air (dark columns) and in a glove box (white columns). The height of the columns gives the average of two data points, which are at the ends of the error bars.

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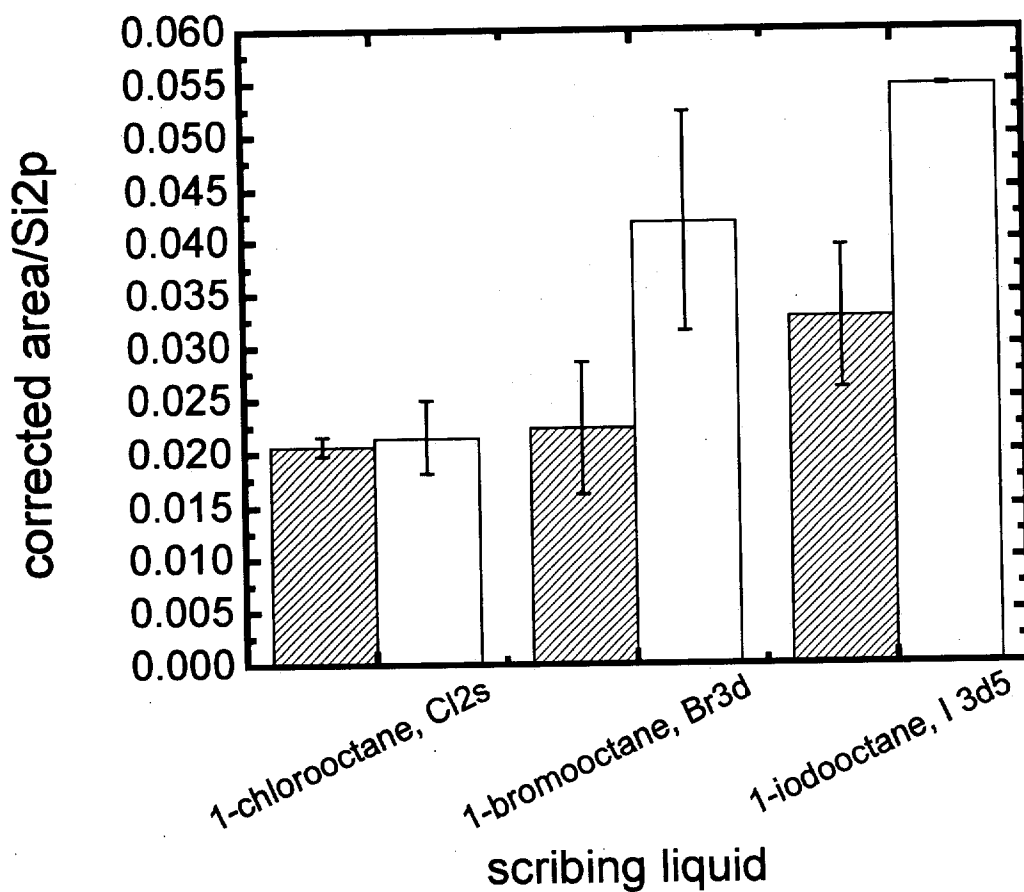


Figure 2. Ratio of the corrected areas (using atomic sensitivity factors) of the XPS halogen signals to Si2p peak areas from silicon scribed under five scribing liquids in the air (dark columns) and in a glove box (white columns). The height of the columns gives the average of two data points, which are at the ends of the error bars.

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CH₃I was obtained from Fisher (99.8%). 1-chloropentane (99%), 1-chlorooctane (99%), 1-bromopentane (99%), 1-bromooctane (99%), 1-iodopentane (98%), and 1-iodooctane (98%) were obtained from Aldrich.

To prepare coatings on silicon, surfaces were a) cleaned as before,¹ b) dried under a jet of nitrogen, c) wet with an alkyl halide, and d) scribed. Scribing was performed with a diamond-tipped rod, which was mounted on three computer-controlled orthogonally-mounted translation stages,¹ that was rastered back and forth across a surface in a series of lines 30 μm apart (first in one direction and then perpendicular to the original direction) to scribe square patches (0.5 - 1 cm^2).

¹ Niederhauser, T. L.; Jiang, G.; Lua, Y.-Y.; Dorff, M. J.; Berges, D. A.; Linford, M. R. *Langmuir* 2001, 19, 5889-5900.