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Supporting Information

Fabrication of Oleophobic Paper with Tunable Hydrophilicity by Treatment with Non-fluorinated Chemicals

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Surface composition of MTMS coated silicon wafers

Carbon, oxygen and silicon are the only three elements detected on all samples. For control sample, oxygen and silicon are two major elements detected. The small amount of carbon on sample surface may due to contamination from air. Si wafer coated with pure, unhydrolyzed MTMS displays similar surface composition as control sample. This phenomenon can be attributed to the fact that pure MTMS is lack of silanol groups to form covalent bonds on substrate surface. As a comparison, Si wafer coated with MTMS hydrolyzed for 5 minutes has a significant different surface composition compared to uncoated Si wafer. The large increase in carbon atomic percentage indicates hydrolyzed MTMS molecules are successfully grafted on substrate surface. The C/Si ratio is also largely off from theoretical value of MTMS monomer (4:1), which indicates that most of methoxyl groups are replaced with more reactive hydroxyl groups. Further extending hydrolysis time to 180 minutes has little effect on the surface composition of MTMS film.

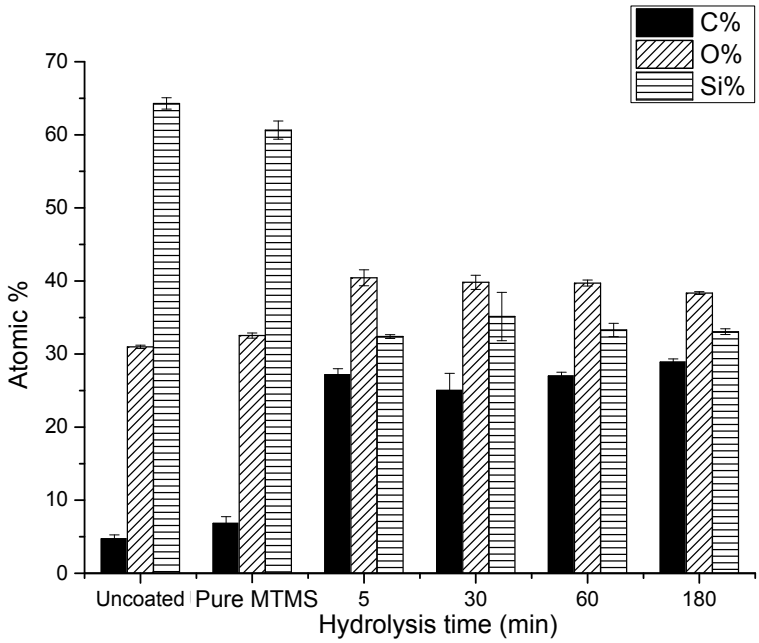

Figure S1. XPS analysis of MTMS film after 0, 5, 30, 60 and 180 min of hydrolysis under an acidic environment