



Figure 1. AFM scans after 3 nm of  $\text{Al}_2\text{O}_3$  deposited on (a) untreated  $\text{MoS}_2$  and (b)  $\text{MoS}_2$  immersed in  $\text{HAuCl}_4$  solution for 10 seconds prior to deposition. EDX maps of a typical flake show (c) sulfur and (d) aluminum distribution. The scale bar is 500 nm for (a) and (b) and 10  $\mu\text{m}$  for (c) and (d).