

## Electronic Supplementary Information (C001222J)

Figure 1. Advancing and receding contact angles of water on  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> (0001) plates after heat treatment at various temperatures.

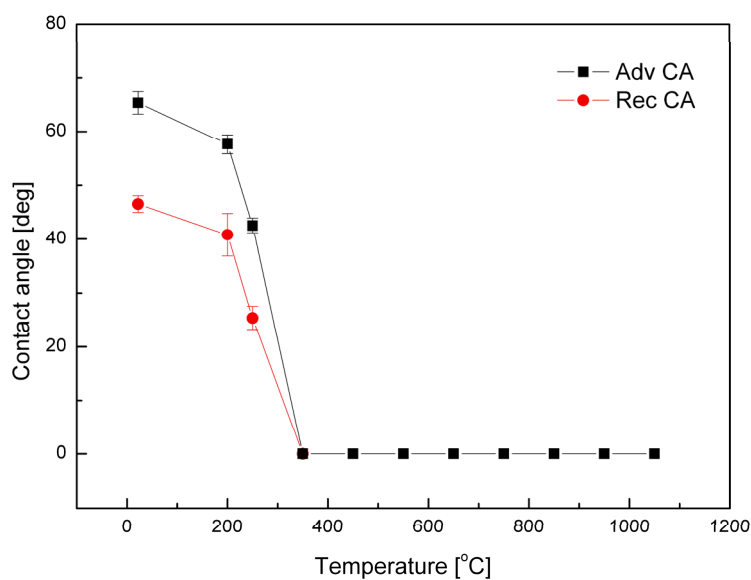


Figure 2. Zeta potential on  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> particles as a function of pH at room temperature.

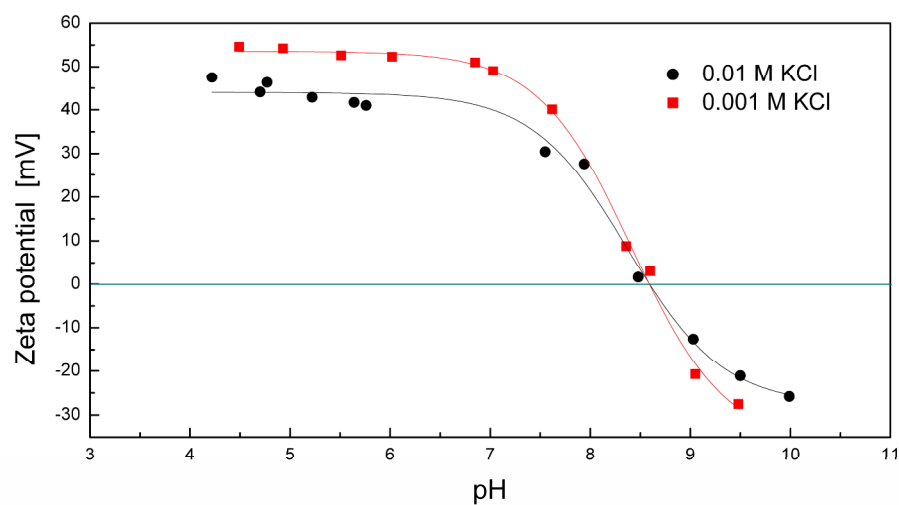


Figure 3. Al (2p) peak and its interpretation on  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> (0001) plates after various thermal treatments: (a) room temperature (i.e. no treatment), (b) 15 h at 500 °C, (c) 15 h at 1050 °C.

