Electrical Supporting Information

Effects of kaolinite layer expansion and impurities on the solid-state reaction of kaolinite

Shingo Machida*, Ken-ichi Katsumata, and Atsuo Yasumori

Department of Material Science and Technology, Faculty of Advanced Engineering, Tokyo University of Science, 6-3-1 Nijuku, Katsushika-ku, Tokyo 125-8585, Japan

*E-mail: shingo.machida@rs.tus.ac.jp
Figure S1. IR spectra in the OH stretching region for (a) GK, (b) GK mixed with CaCO$_3$ after grinding, (c) Me-GK, and (d) Me-GK mixed with CaCO$_3$ grinding.

Figure S2. XRD patterns of (a) KP, (b) U-Me-KP, and (c) L-Me-KP. Reflections due to quartz and illite are marked as filled squire and diamond, and a cross mark represents an unknown phase.
Figure S3. XRD patterns for (a) halloysite+C-4.5 h, (b) halloysite, and (c) ground halloysite mixed with CaCO$_3$. Reflections due to anorthite, CaCO$_3$, and quartz are indicated by filled triangles, circles and squares, respectively, while the cross mark indicates an unknown phase.

Figure S4. FE-SEM images of (a) halloysite, (b) ground halloysite mixed with CaCO$_3$ (dashed ellipse indicates a representative CaCO$_3$ particle), and (c) CaCO$_3$, and (d) magnified view of region in orange rectangle shown in (c).