Fourier Transformed Infrared (FTIR) spectra also clearly confirm the complete conversion from Cu$_2$(OH)$_3$NO$_3$ to Cu(OH)$_2$ (Fig. S-1): The band in the infrared spectrum of Cu(OH)$_2$ at low frequencies below 700 cm$^{-1}$ are due to Cu-O vibrations, while bands at 3303, 3567 cm$^{-1}$ correspond to hydroxyl ions. In addition, the characteristic peak of nitrate anion (1340 cm$^{-1}$), as shown in Fig. S-1(a), is disappeared, indicating that the nitrate ion is replaced by hydroxide anion during the reaction.

Figure S-1. FTIR spectra of Cu$_2$(OH)$_3$NO$_3$ (starting material) (a), shows the characteristic peak of nitrate anion at 1340 cm$^{-1}$ and the as-prepared Cu(OH)$_2$ nanorods (b).