Supplementary Information

Synthesis and Magnetic Property of Cobalt Hydroxide Carbonate and Cobalt Oxide Nanowires

Mitsunori Yada*, Yuko Inoue, Masayuki Koikawa, Toshio Torikai, and Takanori Watari

Saga University, Department of Chemistry and Applied Chemistry, Faculty of Science and Engineering, 1 Honjo, Saga 840-8502, Japan. E-mail: yada@cc.saga-u.ac.jp

Fig. S1 FT-IR spectrum of the as-grown cobalt compound synthesized by using SDS as the additive with $x = 1000$.

![FT-IR spectrum](image)

Fig. S2 SEM images of cobalt compounds synthesized using SDS as the additive with $x = 100$ (a) and 5000 (b).

![SEM images](image)
Fig. S3  XRD patterns of the cobalt compounds synthesized with $x = 1000$ and using the following additives: (a) SDS, (b) no additive, (c) $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$, (d) $\text{C}_6\text{H}_{13}\text{OSO}_3\text{Na}$, and (e) a mixture of $\text{C}_{16}\text{H}_{33}\text{OSO}_3\text{Na}$ and $\text{C}_{18}\text{H}_{37}\text{OSO}_3\text{Na}$. Peak assignment: ■, $\text{Co(OH)}_x(\text{CO}_3)_{0.5(2-x)} \cdot n\text{H}_2\text{O}$; *, unknown peak.

Fig. S4  SEM image of commercially available $\text{Co}_3\text{O}_4$ bulk powder.