

Supplementary Information

Pressure-dependent CO<sub>2</sub> Thermolysis  
on Barium Titanate Nanocatalysts

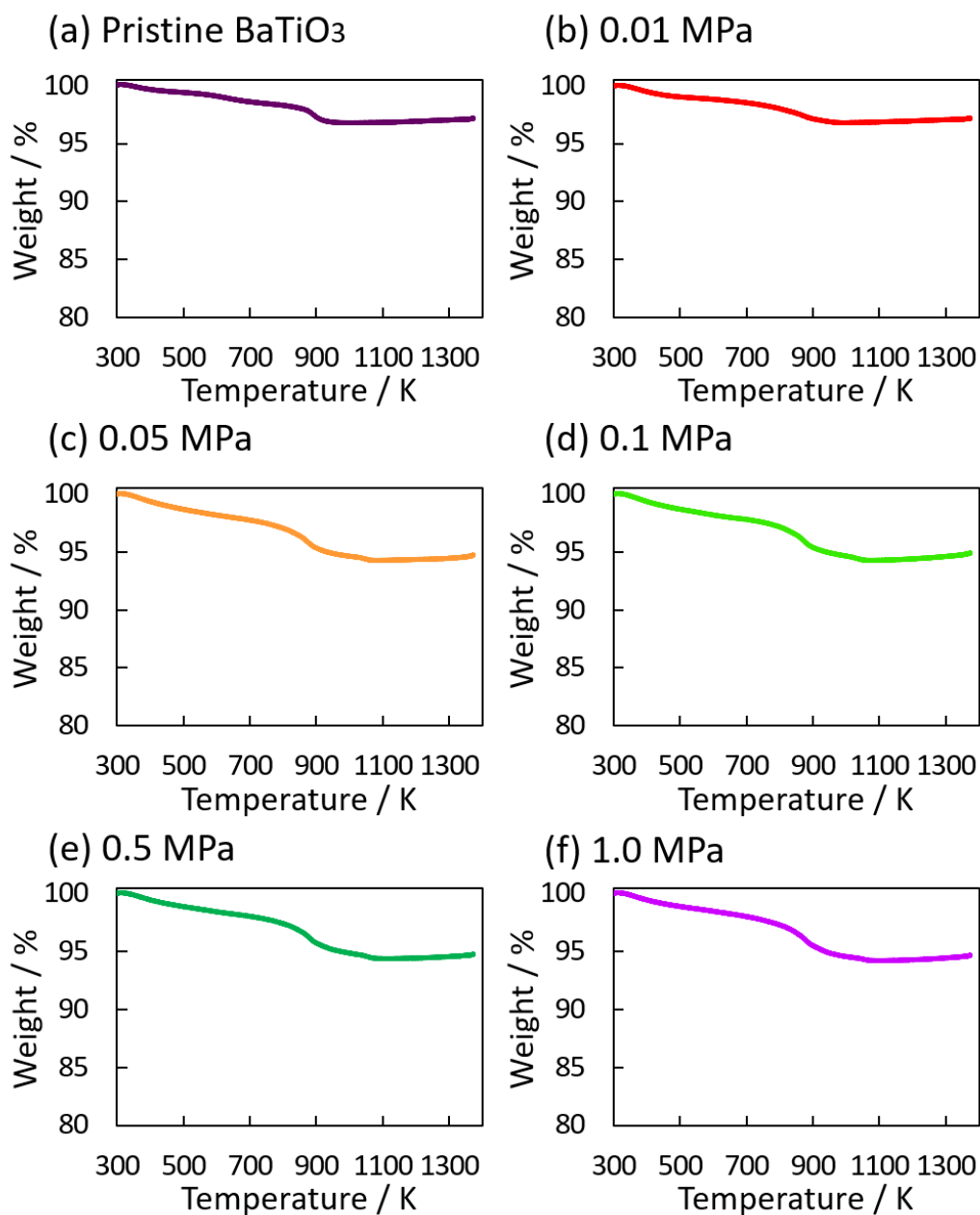
Smita Takawane,<sup>a</sup> Masatoshi Miyamoto,<sup>a</sup> Takumi Watanabe,<sup>a</sup> and Tomonori Ohba<sup>a,\*</sup>

<sup>a</sup> Graduate School of Science, Chiba University, 1-33 Yayoi, Inage, Chiba 263-8522,

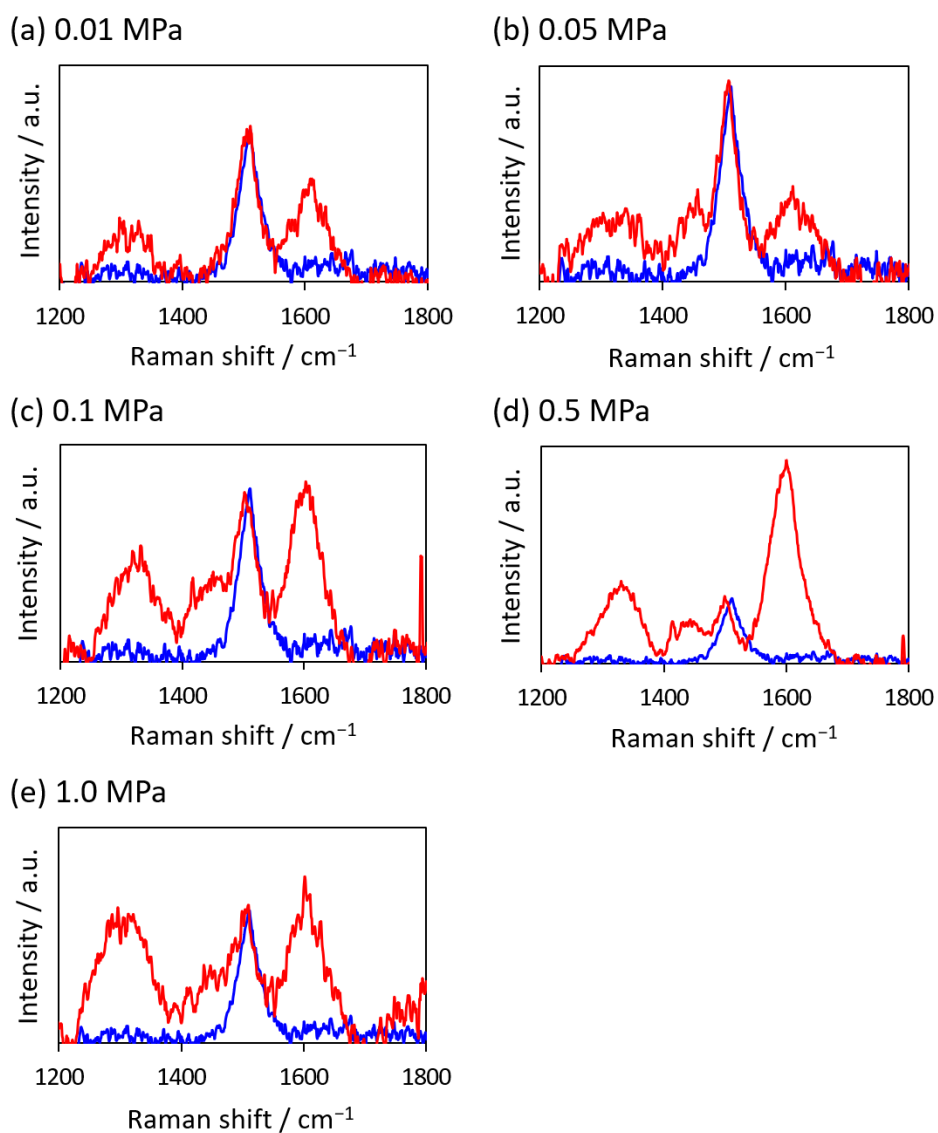
Japan

\**Corresponding author.* E-mail address: ohba@chiba-u.jp (T. Ohba)

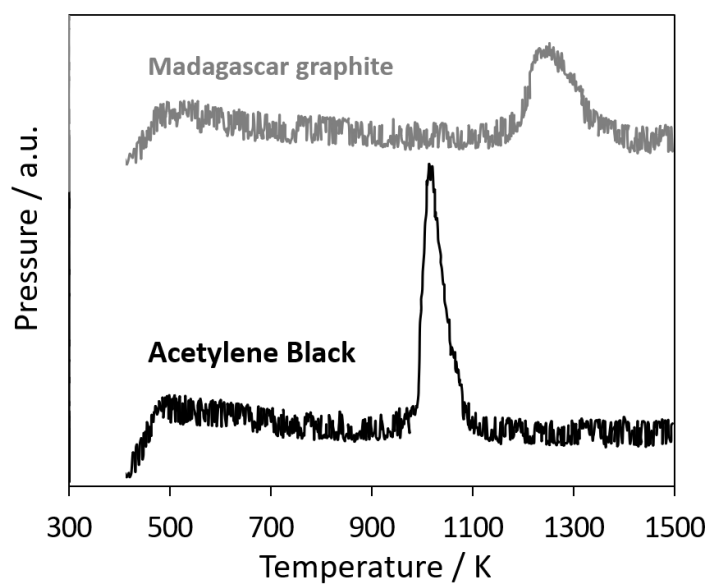
Figures S1–S3



**Fig. S1.** Temperature-programmed desorption of chemisorbed CO<sub>2</sub> and reduced solid carbon on nanocatalysts in O<sub>2</sub> atmosphere before CO<sub>2</sub> thermolysis (a) and after CO<sub>2</sub> thermolysis at 700 K and 0.01 MPa (b), 0.05 MPa (c), 0.1 MPa (d), 0.5 MPa (e), and 1.0 MPa (f).



**Fig. S2.** Raman scattering spectra on nanocatalysts after CO<sub>2</sub> thermolysis at 700 K and 0.01 MPa (a), 0.05 MPa (b), 0.1 MPa (c), 0.5 MPa (d), and 1.0 MPa (e). Pristine and CO<sub>2</sub>-reduced nanocatalysts are shown by blue and red curves, respectively.



**Fig. S3.** Temperature-programmed desorption of acetylene black and Madagascar graphite in O<sub>2</sub> atmosphere.