## **Supporting Information**

## Dehydrogenation of propane over high silica \*BEA type gallosilicate (Ga-Beta)

Masahiro Nakai,<sup>[a]</sup> Koji Miyake, <sup>[b]\*</sup> Reina Inoue, <sup>[a]</sup> Kaito Ono, <sup>[a]</sup> Hasna Al Jabri, <sup>[a]</sup> Yuichiro Hirota, <sup>[a]</sup> Yoshiaki Uchida, <sup>[a]</sup> Shunsuke Tanaka, <sup>[c]</sup> Manabu Miyamoto, <sup>[d]</sup> Yasunori Oumi <sup>[e]</sup> Chang Yi Kong <sup>[b]</sup> and Norikazu Nishiyama <sup>[a]</sup>

- a) Division of Chemical Engineering, Graduate School of Engineering Science, Osaka University, 1-3 Machikaneyama, Toyonaka, Osaka 560-8531, Japan. E-mail: \*m-nakai@cheng.es.osaka-u.ac.jp
- b) Department of Applied Chemistry and Biochemical Engineering, Faculty of Engineering, Shizuoka University, 3-5-1 Johoku Naka-ku Hamamatsu, 432-8561, Japan E-mail: <a href="miyake.koji@shizuoka.ac.jp">miyake.koji@shizuoka.ac.jp</a>
- c) Department of Chemical, Energy and Environmental Engineering, Faculty of Environmental and Urban Engineering, Kansai University, 3-3-35 Yamate-cho, Suita-shi, Osaka, 564-8680, Japan
- d) Department of Chemistry and Biomolecular Science, Gifu University, 1-1 Yanagido, Gifu, 501-1193, Japan
- e) Research Equipment Sharing Promotion Center, Organization for Research and Community Development, Gifu University, 1-1 Yanagido, Gifu, 501-1193, Japan

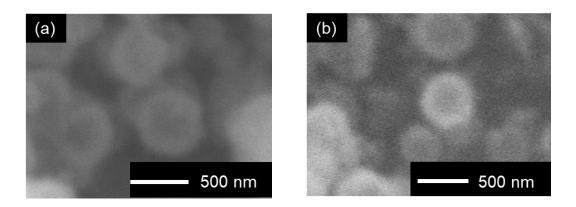


Fig. S1 SEM image of (a)Ga-Beta-150 and (b)Ga-Beta-200

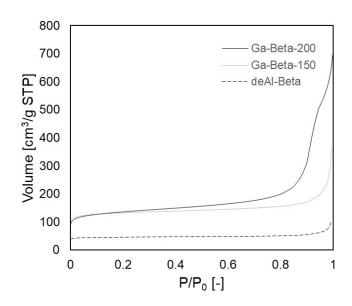


Fig. S2  $N_2$  adsorption isotherms of Ga-Beta-200, Ga-Beta-150 and deAl-Beta

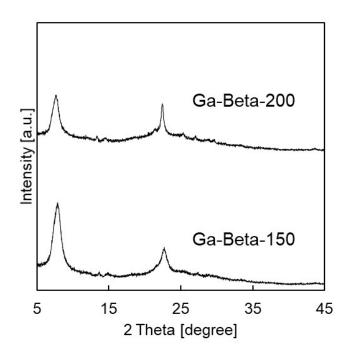


Fig. S3 XRD patterns of Ga-Beta after PDH reaction

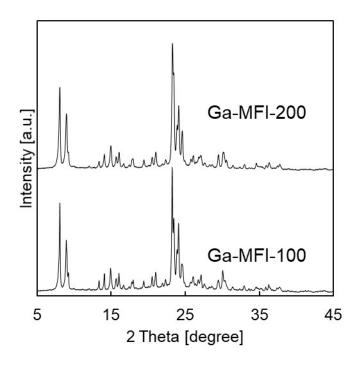


Fig. S4 XRD patterns of Ga-MFI

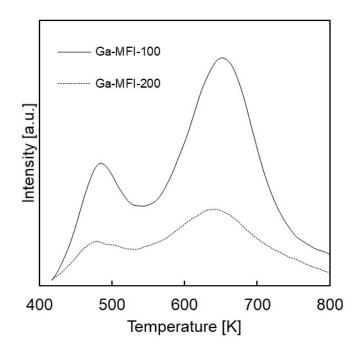


Fig. S5 NH<sub>3</sub>-TPD profiles of Ga-MFI