

Supporting information for

Effect of Si/Al ratio in Ga/mesoporous HZSM-5 on the production of benzene, toluene, and xylene via coaromatization of methane and propane

Min Yeong Gim^a, Changyeol Song^a, Yong Hyun Lim^a, Kwan-Young Lee^b, Do Heui Kim^{*a}

*^a School of Chemical and Biological Engineering, Institute of Chemical Processes,
Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 08826, South Korea*

*^b Department of Chemical and Biological Engineering, Korea University, 145 Annam-ro,
Sungbuk-ku, Seoul 02841, South Korea*

***Corresponding author**

(Tel: +82-2-880-1633, Fax: +82-2-888-7295, E-mail: dohkim@snu.ac.kr)

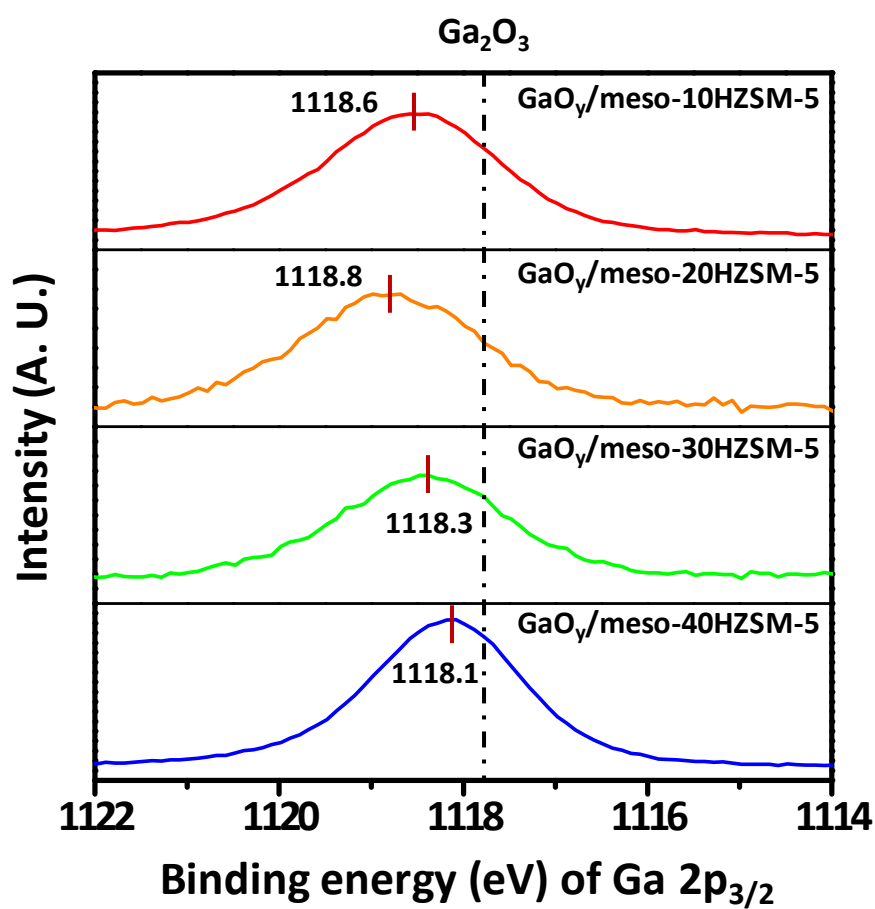


Figure S1. XPS spectra for Ga 2p level of GaO_y/meso-XHZSM-5 (X = 10, 20, 30, and 40) catalysts.

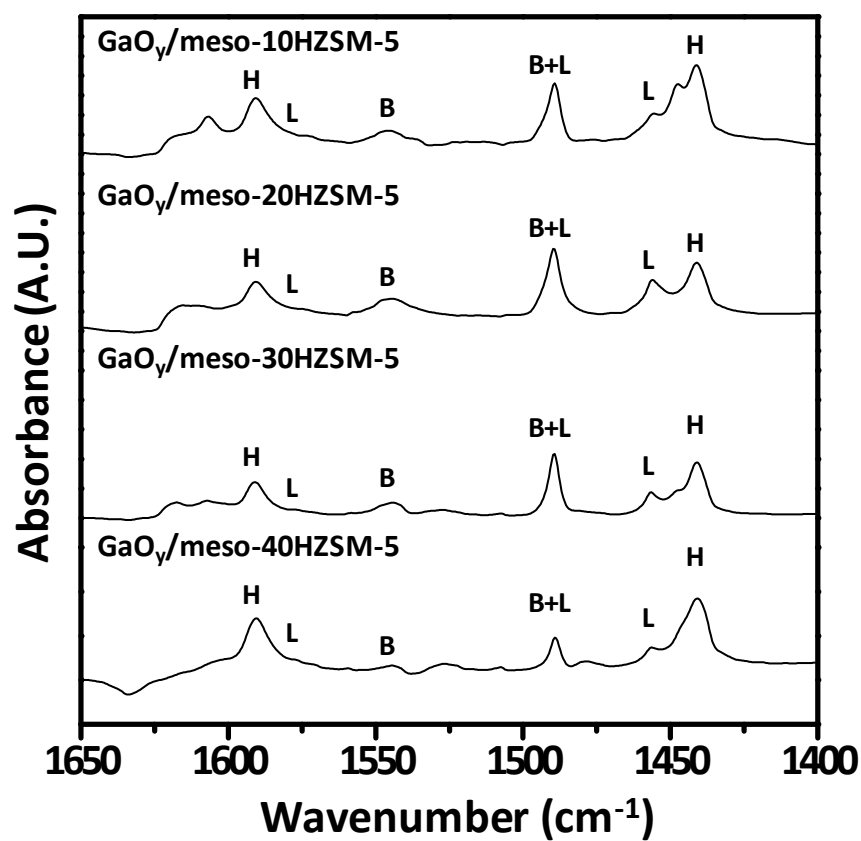


Figure S2. Pyridine FT-IR spectra of GaO_y/meso-XHZSM-5 (X = 10, 20, 30, and 40) catalysts. H: hydrogen bonded pyridine; L: Lewis acid bound pyridine; B: Brønsted acid bound pyridinium ion.

Table S1. The B/L ratios of GaO_y/meso-XHZSM-5 (X = 10, 20, 30 and 40) catalysts

Catalyst	Brönsted acid site /Lewis acid site (B/L ratio) ¹
GaO _y /meso-10HZSM-5	0.96
GaO _y /meso-20HZSM-5	1.01
GaO _y /meso-30HZSM-5	1.08
GaO _y /meso-40HZSM-5	1.19

¹ Determined by the pyridine FT-IR spectroscopy