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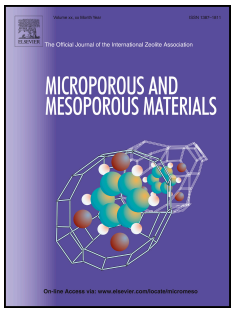

Comparative study of aluminosilicate glass and zeolite precursors in terms of Na environment and network structure

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PII: S1387-1811(18)30244-0

DOI: 10.1016/j.micromeso.2018.05.006

Reference: MICMAT 8908

To appear in: *Microporous and Mesoporous Materials*

Received Date: 6 February 2018

Revised Date: 4 April 2018

Accepted Date: 5 May 2018

Please cite this article as: H. Yamada, S. Sukenaga, K. Ohara, C. Anand, M. Ando, H. Shibata, T. Okubo, T. Wakihara, Comparative study of aluminosilicate glass and zeolite precursors in terms of Na environment and network structure, *Microporous and Mesoporous Materials* (2018), doi: 10.1016/j.micromeso.2018.05.006.

Comparative Study of Aluminosilicate Glass and Zeolite Precursors in Terms of Na Environment and Network Structure

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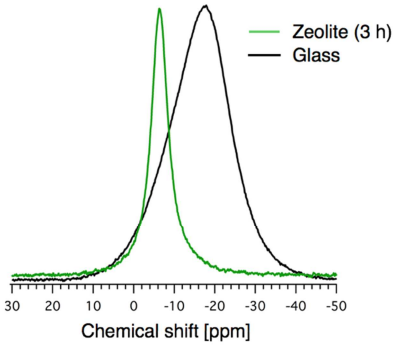
TOC graphic



Non-crystalline aluminosilicate with the same composition but prepared via different pathways

Highlights:

Structural comparison of the amorphous precursor for FAU-type zeolites with the glass possessing similar compositions was conducted.

Na environment gradually ordered during the crystallization of FAU-type zeolite, and Na environment in the zeolite precursor prepared in this study possessed more crystalline-like structure than that in the glass.

Comparison of the zeolite precursor and the glass clarified different Na–O distances and ring-distributions.

Löwenstein's rule, prohibiting formation of Al-O-Al bonding in the zeolite crystals, is considered also applicable, to a substantial extent, to the structure of zeolite precursor.