

Effect of Pore Shape on Freezing and Melting Temperatures of Water

Kunimitsu Morishige, Hiroaki Yasunaga, and Yuki Matsutani

Department of Chemistry, Okayama University of Science, 1-1 Ridai-cho, Kita-ku, Okayama
700-0005, Japan

Corresponding should be addressed to Professor K. Morishige (e-mail: morishi@chem.ous.ac.jp)

Figure captions

Supporting Figure 1S. Change of the X-ray diffraction pattern of water confined in C/MCM-41 slightly below complete filling upon cooling and subsequent heating.

Supporting Figure 2S. Change of the X-ray diffraction pattern of water confined in C/SBA-15 slightly below complete filling upon cooling and subsequent heating.

Supporting Figure 3S. Change of the X-ray diffraction pattern of water confined in C/KIT-6 slightly below complete filling upon cooling and subsequent heating.

Supporting Figure 4S. Change of the X-ray diffraction pattern of water confined in C/SBA-16 slightly below complete filling upon cooling and subsequent heating.

Supporting Figure 5S. Position and width of the main diffraction peak as a function of temperature for water confined slightly below complete filling in C/MCM-41. Open and closed symbols denote cooling and heating processes, respectively.

Supporting Figure 6S. Melting point depression of ice confined in the mesopores against the S/V ratio of the mesopores for the ordered mesoporous materials with several different pore geometries. Open circles, triangles, and squares denote the melting point depression of ice confined in the cylindrical, interconnected cylindrical, and interconnected spherical pores, respectively. Closed symbols denote the melting point depression of ice confined in the open pores of the ordered mesoporous carbons with their inverse replica structures.

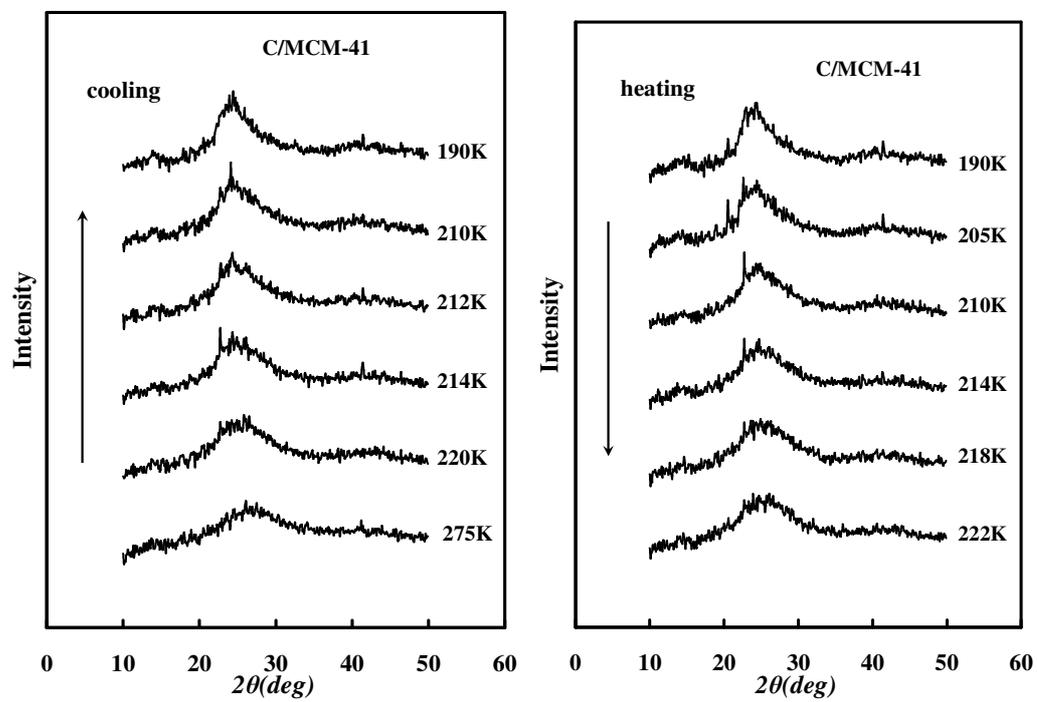


Figure 1S. Morishige, Yasunaga, and Matsutani

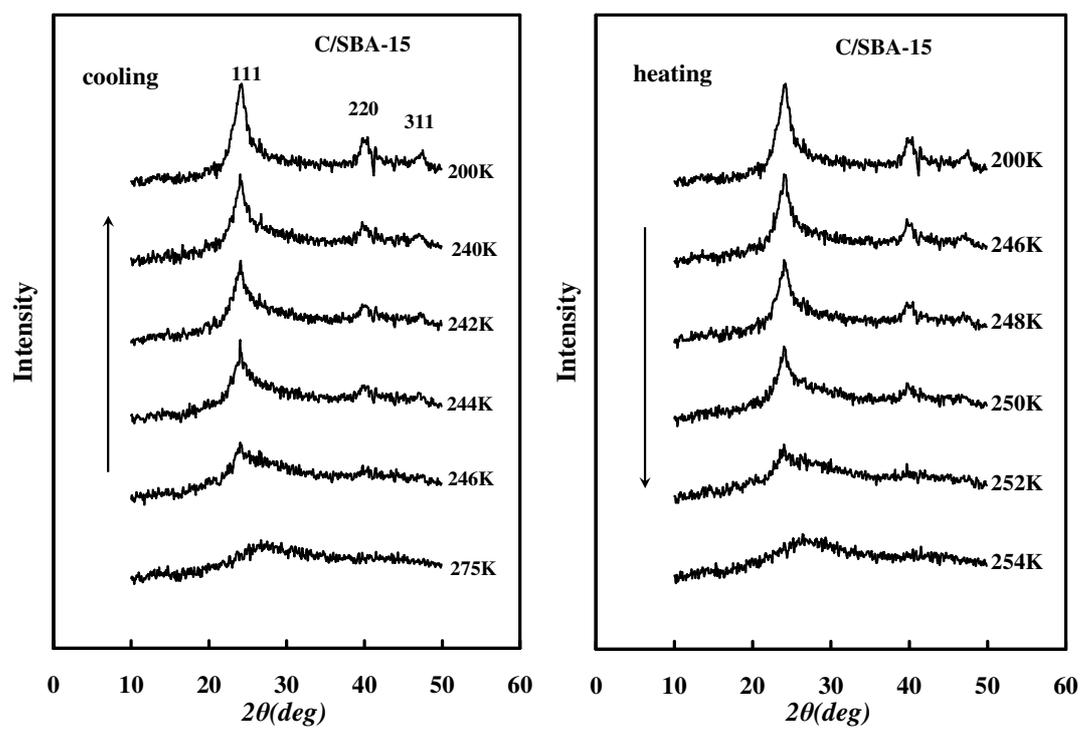


Figure 2S. Morishige, Yasunaga, and Matsutani

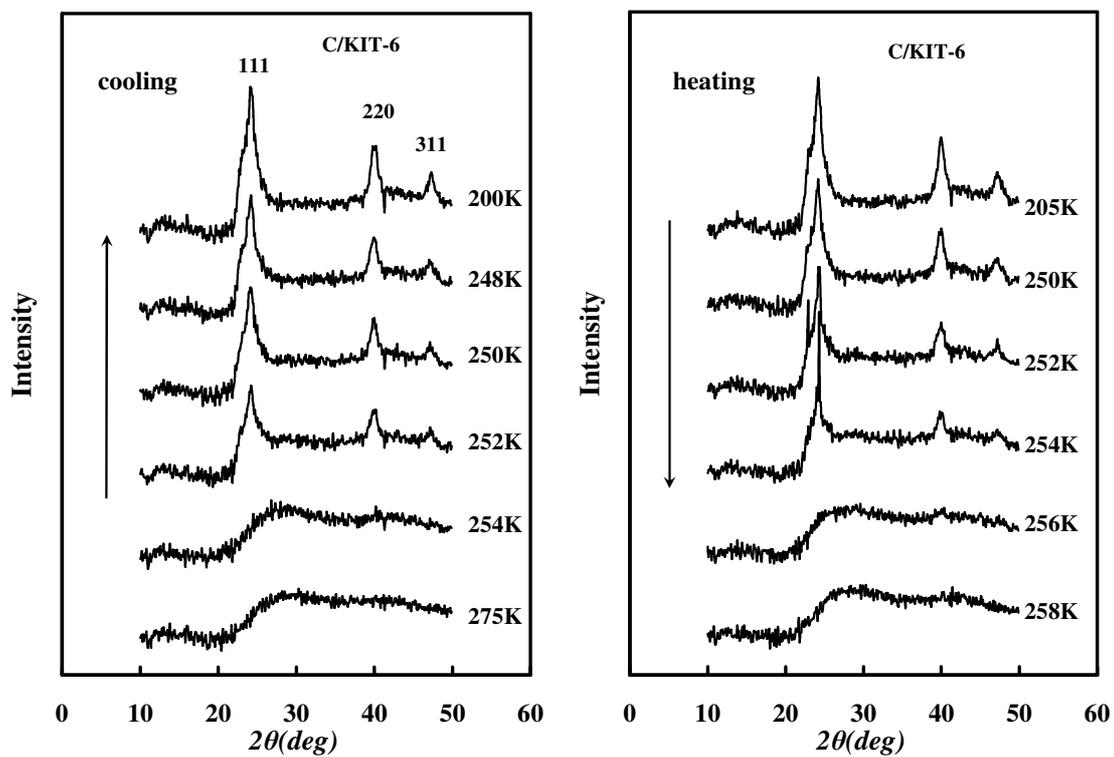


Figure 3S. Morishige, Yasunaga, and Matsutani

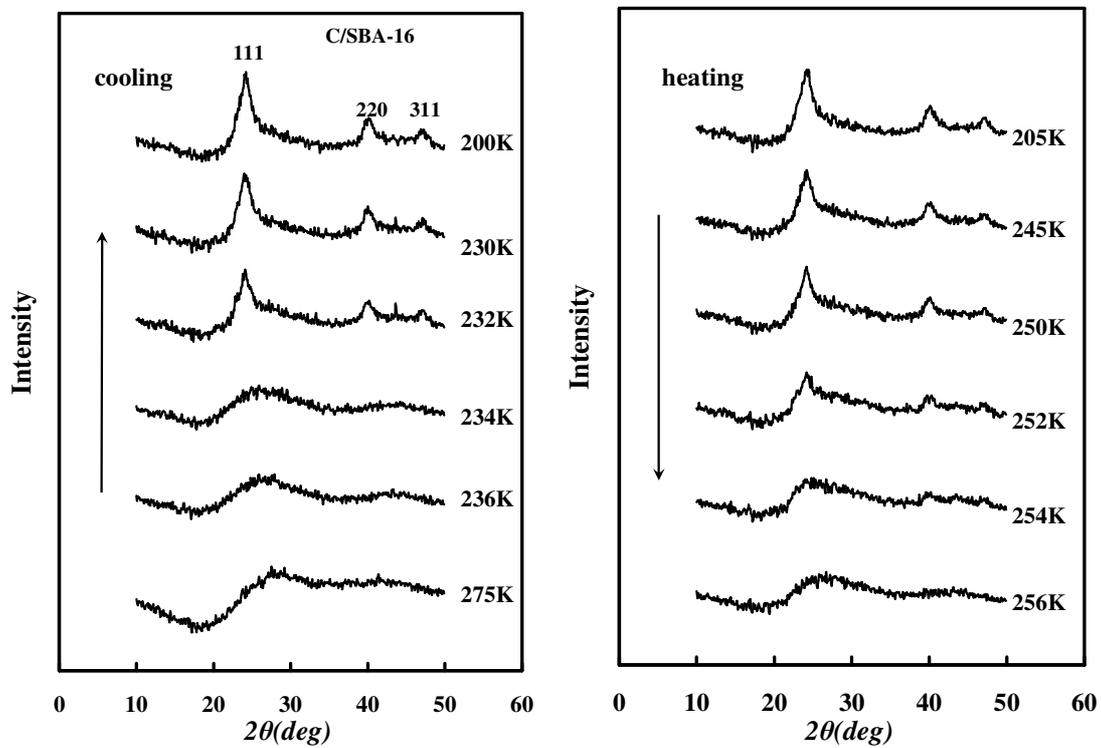


Figure 4S. Morishige, Yasunaga, and Matsutani

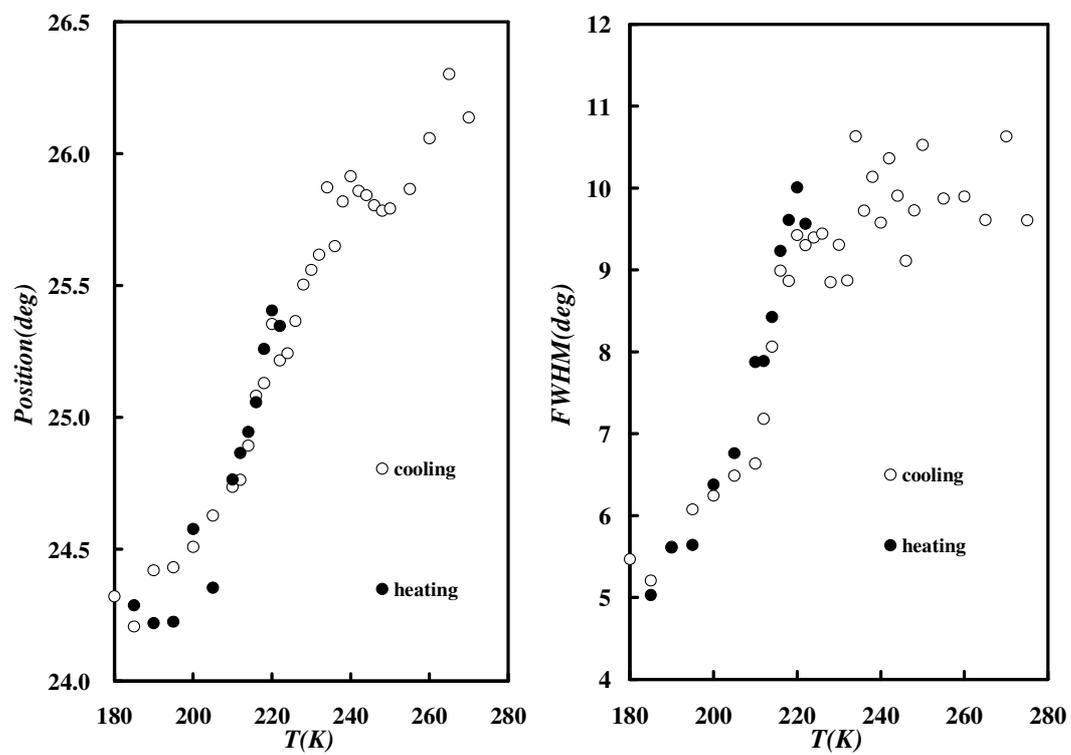


Figure 5S. Morishige, Yasunaga, and Matsutani

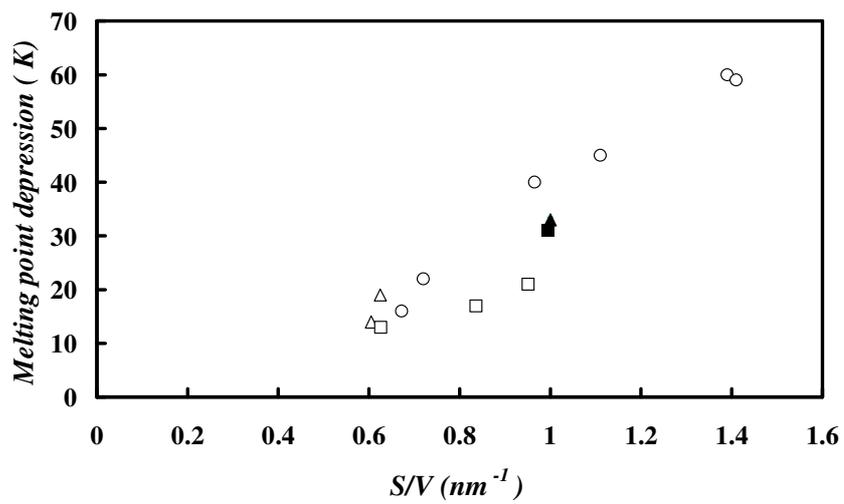


Figure 6S. Morishige, Yasunaga, and Matsutani