

Electronic Supplementary Information for :

**Raman Spectroscopic Study on the Structure of Water
in Aqueous Solution of Amphoteric Polymers**

Hiroki Kitano,* Kohei Takaha, Makoto Gemmei-Ide

*Department of Chemical and Biochemical Engineering,
Toyama University, Toyama 930-8555, Japan*

* To whom correspondence should be addressed. Tel: +81-76-445-6868. Fax: +81-76-445-6703. E-mail:
kitano@eng.toyama-u.ac.jp.

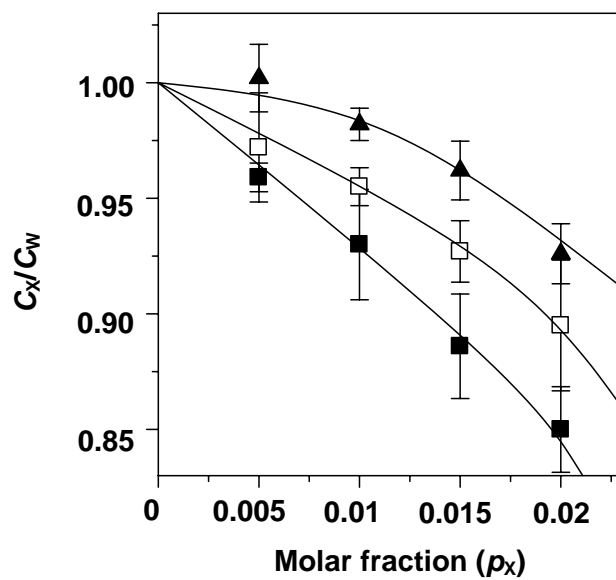


Figure S1. The effect of concentrations of various MA-MAPTAC copolymers on the C_x/C_w value at 25 °C.
□, Polymer-1 (PolyMA). ▲, Polymer-3 (MA = 67 %). ■, Polymer-7 (PolyMAPTAC).

Figure S1 shows the effect of concentration of various MA-MAPTAC copolymers, PolyMA and PolyMAPTAC on the C_X/C_W value, where C_X and C_W are the C values for an aqueous polymer solution and pure water, respectively. The C_X/C_W values for the polymer solutions were almost always slightly smaller than unity. In a solution of homopolymers, PolyMA (Polymer-1) and PolyMAPTAC (Polymer-7), the C_X/C_W value significantly decreased with an increase in the concentration, whereas in the solution of copolymer, Polymer-3, the C_X/C_W value more gradually decreased, and was always larger than those for the homopolymers (PolyMA (Polymer-1) and PolyMAPTAC (Polymer-7)). These results are due to the difference in the disturbing effect of the polymers on the H-bonded network structure of water.