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Investigating Proton Conduction using Guest-Loaded Metal-Organic Frameworks

Lin, Giselle

Lin, G. (2019). Investigating Proton Conduction using Guest-Loaded Metal-Organic Frameworks. Final report and reflection. Program for Undergraduate Research Experience (PURE), University of Calgary, Calgary, Alberta. 1-8.

http://hdl.handle.net/1880/111094

other

Appendix

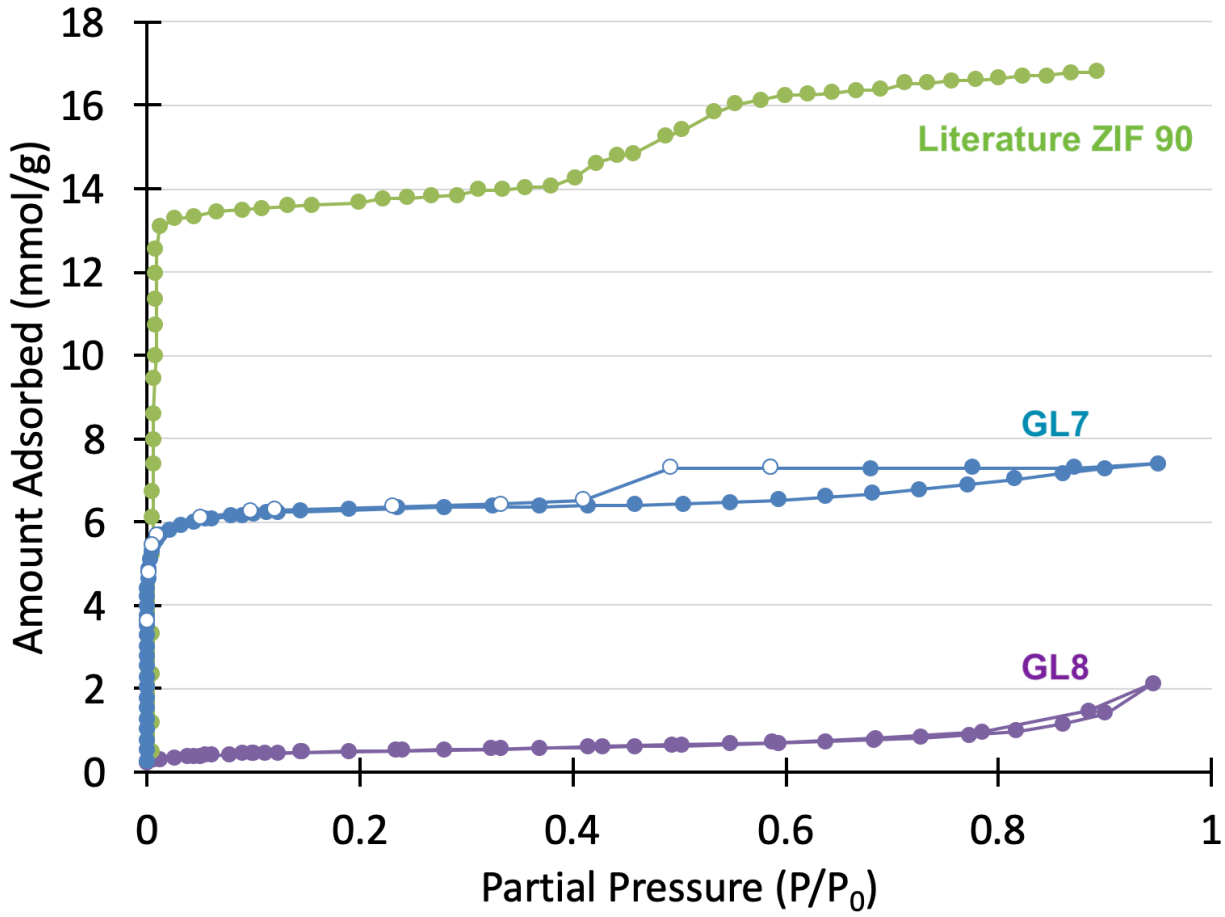

Figure 1: Adsorption isotherms of ZIF-90 with and without the trialkyl phosphate guests. GL7 was synthesized in a triethyl phosphate solvent, while GL8 used trimethyl phosphate as the solvent. Measurements were taken using a micromeritics ASAP machine, with N_2 as the adsorbent gas.

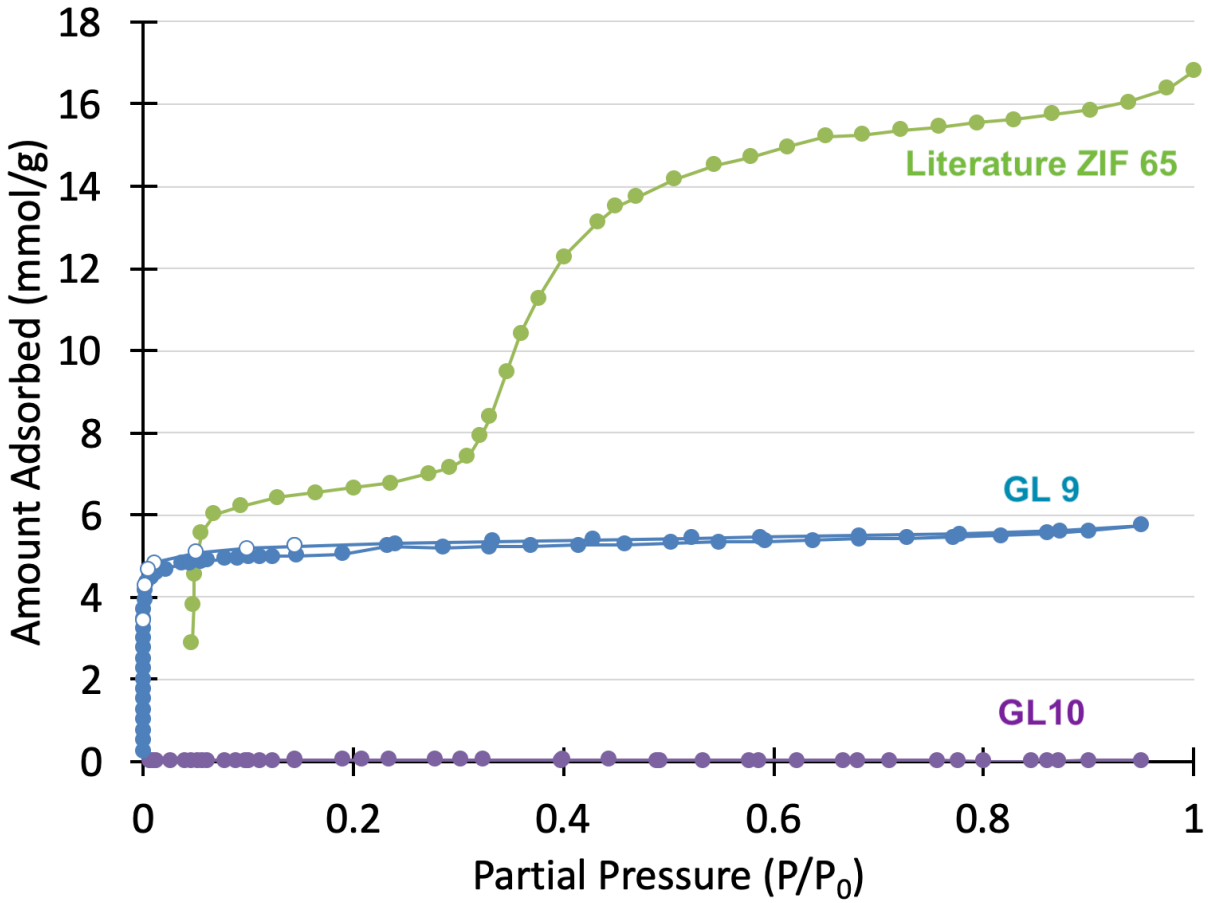

Figure 2: Adsorption isotherms of ZIF-65 with and without the trialkyl phosphate guests. GL10 was synthesized in a triethyl phosphate solvent, while GL9 used trimethyl phosphate as the solvent. Measurements were taken using a micromeritics ASAP machine, with N_2 as the adsorbent gas.

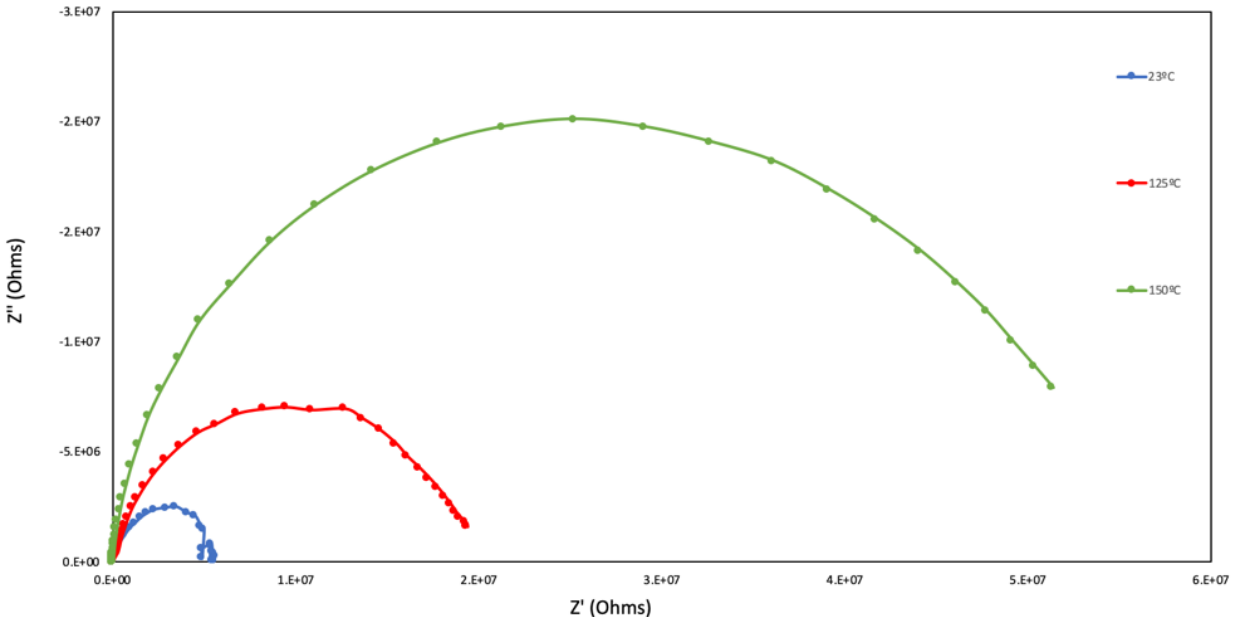

Figure 3: Nyquist plots of GL9 at increasing temperatures. Measurements were taken using a Versastat electrochemical impedance spectrometer.

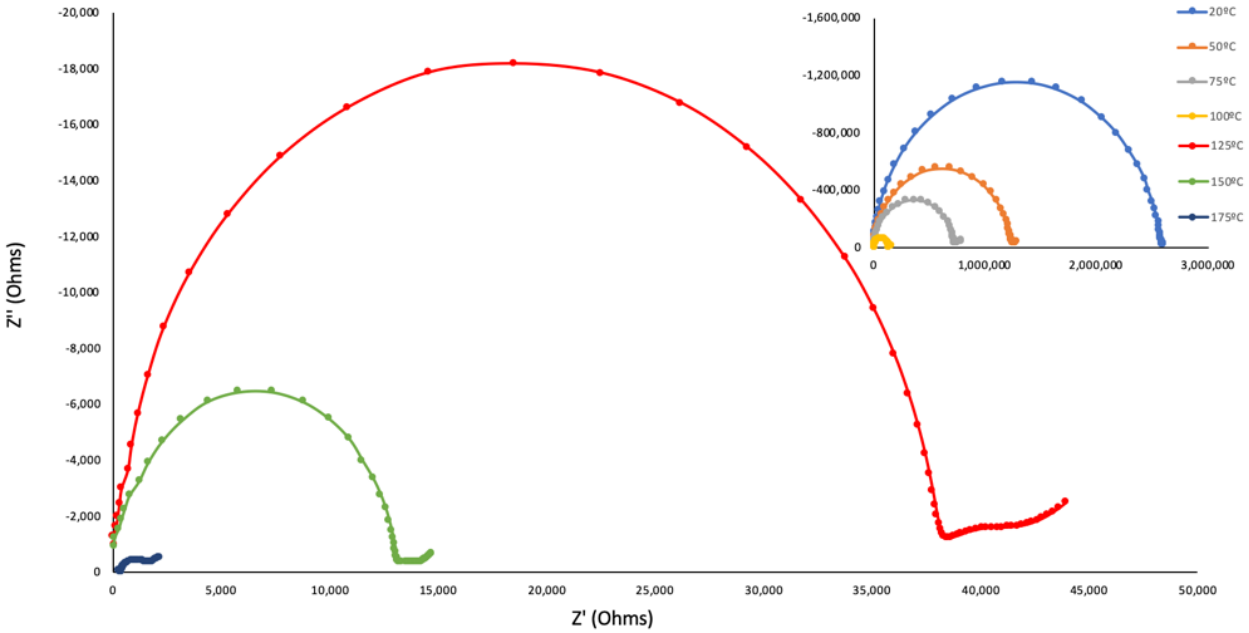

Figure 4: Nyquist plots of synthesized PBI at increasing temperatures. Measurements were taken using a Versastat electrochemical impedance spectrometer.

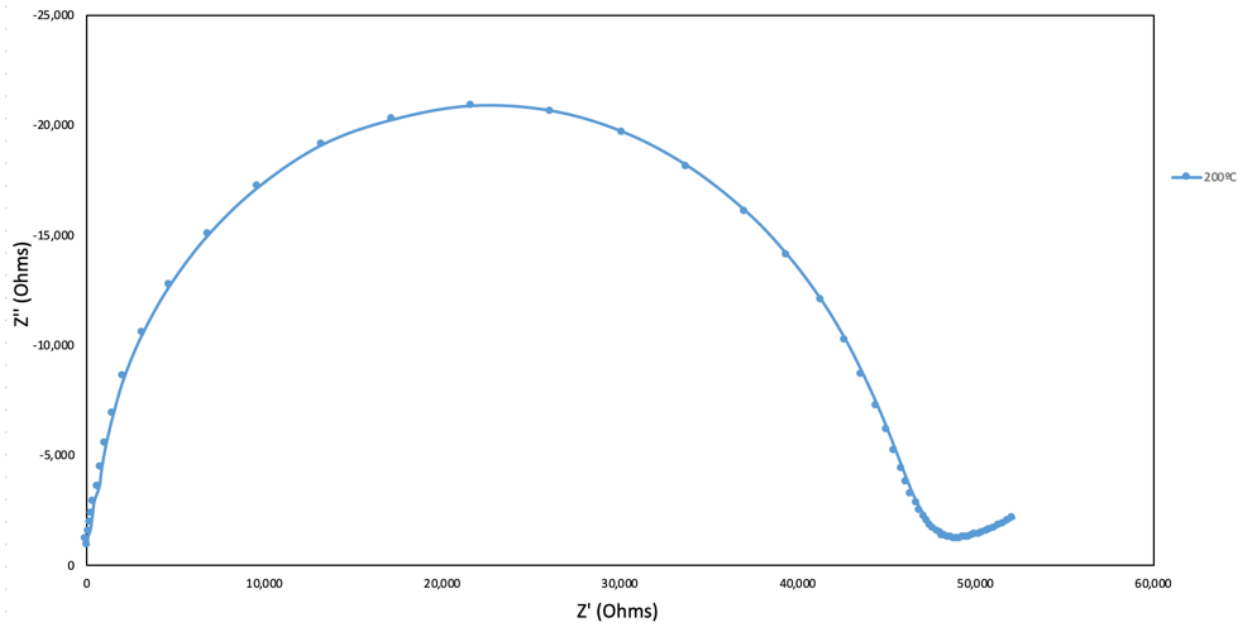

Figure 5: Nyquist plot of a hybrid pellet consisting of equal portions of both GL9 and PBI at 200ºC. Measurements were taken using a Versastat electrochemical impedance spectrometer.