Supporting information

Tuned Polymer Electrolyte Membranes Based on Aromatic Polyethers for Fuel Cell Applications

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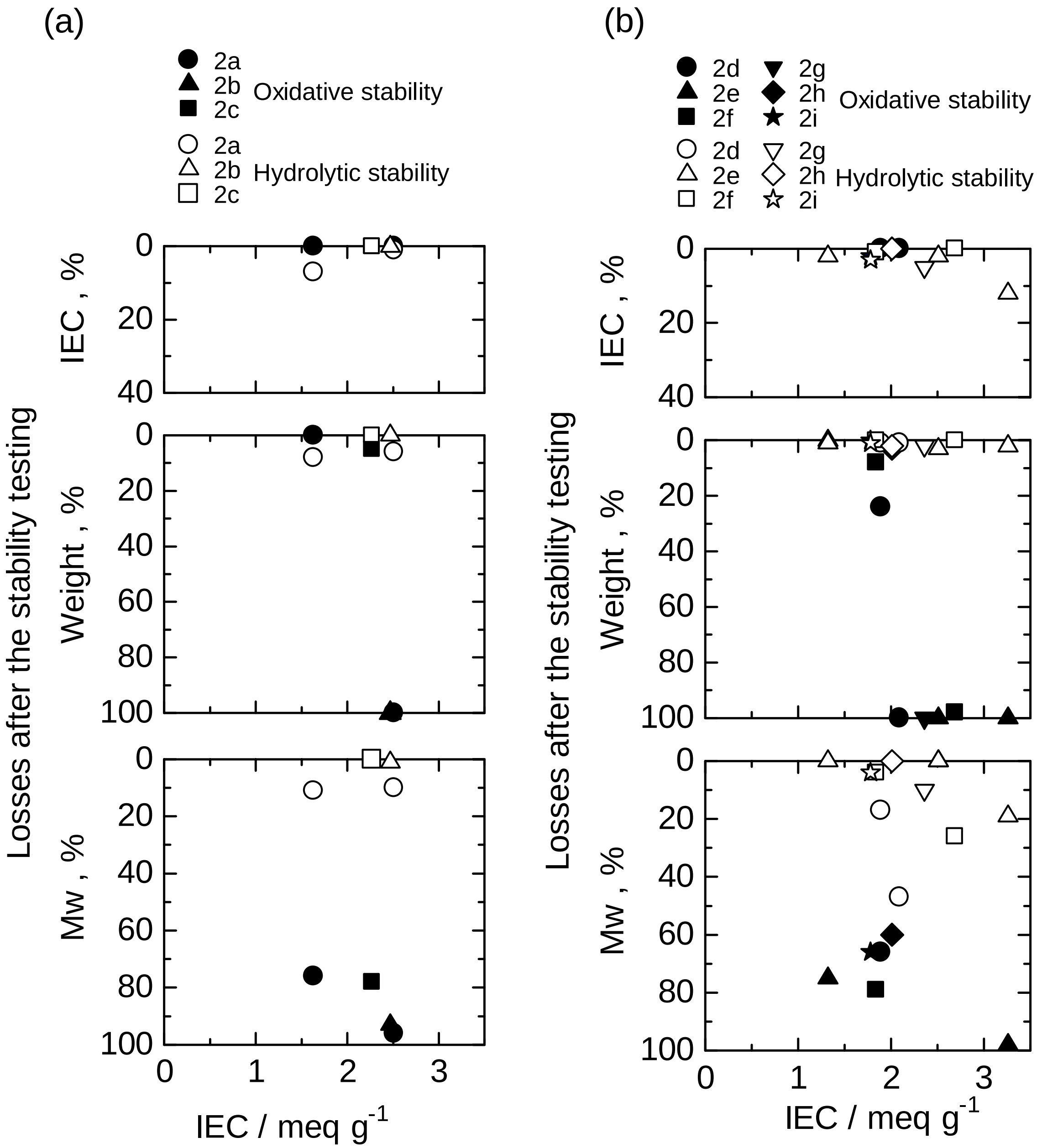

Figure S1. Losses of IEC, weight and molecular weight of **2a-i** membranes after oxidative and hydrolytic stability tests; (a) homopolymers **2a-c** and (b) copolymers **2d-i**.

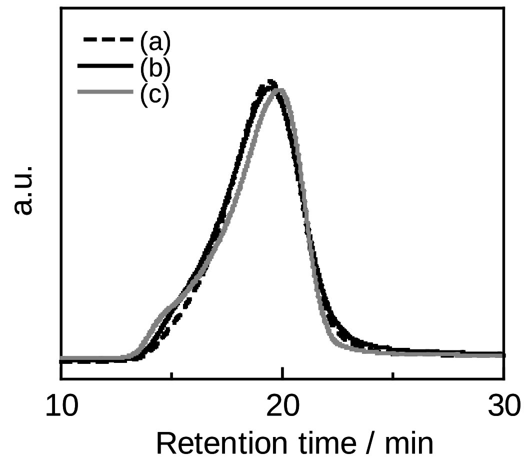

Figure S2. Elution curves of gel permeation chromatograms of (a) **2e** (IEC = 3.26 meq/g), (b) **2e-100** (IEC = 3.26 meq/g) after durability test at 100 °C and 80% RH for 10,000 h, and (c) **2e-120** (IEC = 3.26 meq/g) after durability test at 120 °C and 40% RH for 10,000 h.

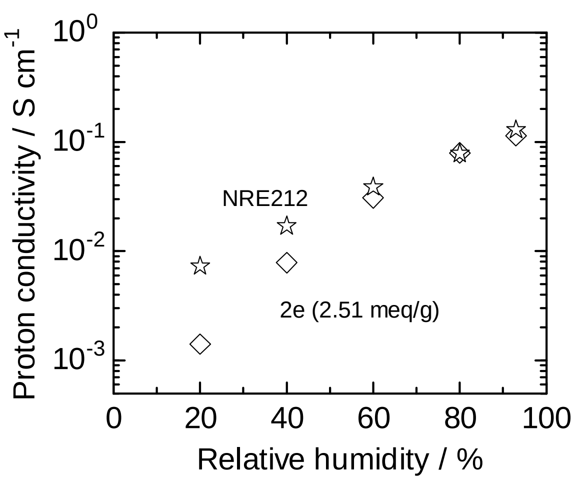

Figure S3. Humidity dependence of the proton conductivity of **2e** (2.51 meq/g) and Nafion NRE 212 membranes at 90 °C.

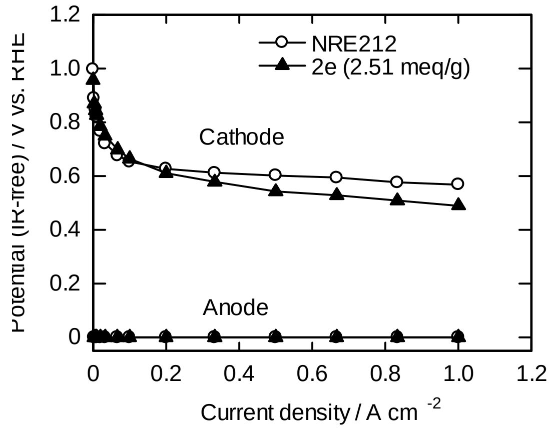

Figure S4. Steady-state current potential curves of fuel cells at low humidity conditions for **2e** (▲) and Nafion (○) membranes. All cells were operated at 90 °C. Potentials were corrected by ohmic resistance measured with a current interrupter.

Table S1. Glass Transition Temperature of Polymers.

polymer	T_g (°C)
1a	282
1c	311
1d	245
1e	264