

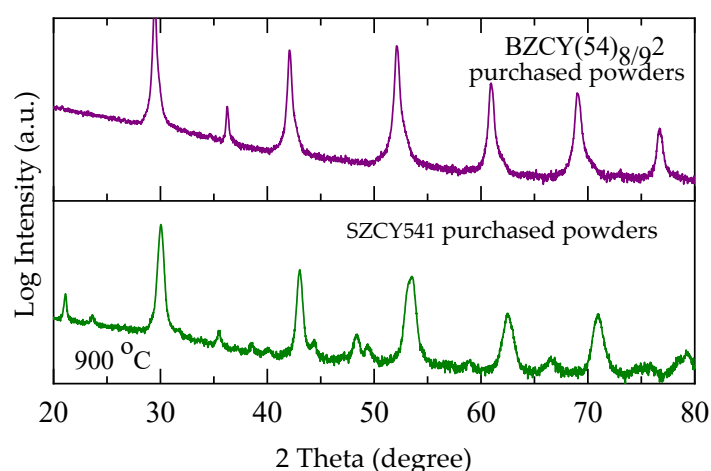
# Processing Ceramic Proton Conductor Membranes for Use in Steam Electrolysis

Kwati Leonard <sup>1,2,\*</sup>, Wendelin Deibert <sup>2</sup>, Mariya E. Ivanova <sup>2</sup>, Wilhelm A. Meulenber <sup>2</sup>, Tatsumi Ishihara <sup>1</sup>, and Hiroshige Matsumoto <sup>1</sup>

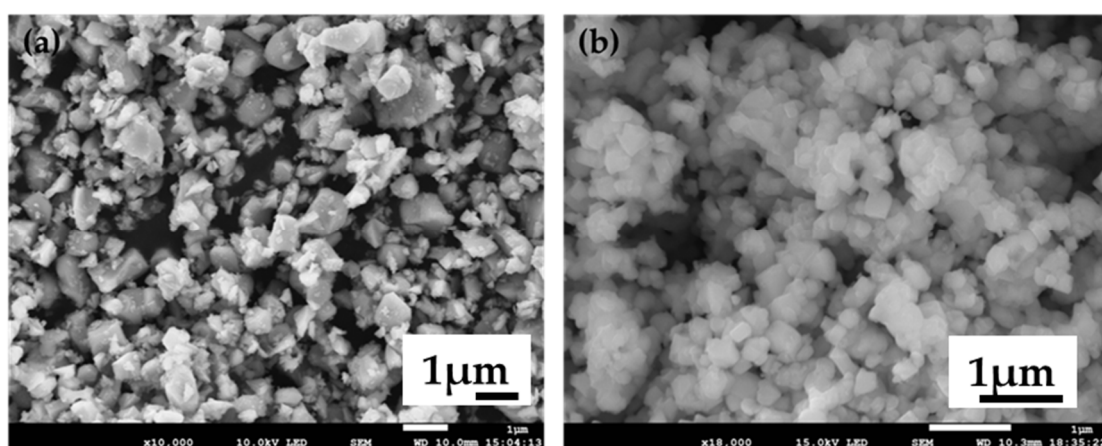
<sup>1</sup> International Institute for Carbon Neutral Energy Research (WPI-I<sup>2</sup>CNER), Kyushu University 744 Motooka, Nishiku, Fukuoka 819-0395, Japan; ishihara@cstf.kyushu-u.ac.jp (T.I.); matsumoto@i2cner.kyushu-u.ac.jp (H.M.)

<sup>2</sup> Institute of Energy and Climate Research IEK-1, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany; w.deibert@fz-juelich.de (W.D.); m.ivanova@fz-juelich.de (M.E.I.); w.a.meulenber@fz-juelich.de (W.A.M.)

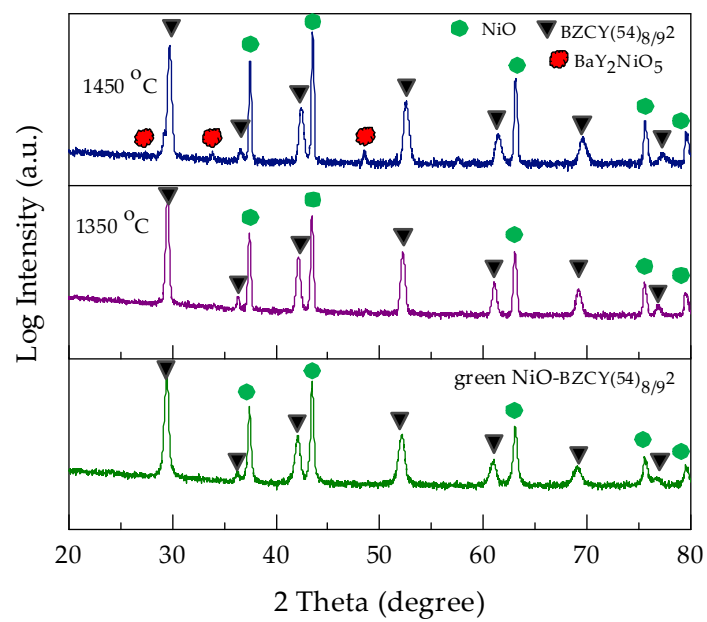
\* Correspondence: kwati@i2cner.kyushu-u.ac.jp; Tel.: +81-092-802-6717



**Figure S1.** X-ray diffraction patterns of commercial SZCY541 and BZCY(54)<sub>8/92</sub> powders from KUSAKA RARE METAL PRODUCTS Co., LTD, Japan



**Figure S2.** SEM morphology of BZCY(54)<sub>8/92</sub> powders (a) Purchased powder from KUSAKA RARE METAL PRODUCTS Co., LTD, Japan, as calcined at 1200 °C (b) In house synthesized after calcination at 1300 °C and milling.



**Figure S3.** XRD patterns of green NiO-BZCY(54)<sub>8/92</sub> electrode substrate and after sintering at 1350 and 1450 °C