Supplementary Information

Effect of alkaline-earth species in phosphate glasses on mobility of proton carriers

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Table S1 Glass transition temperatures, T_g, and glass deforming temperatures, T_d, of the Mg and Ba glasses before and after APS.

Glass	Before APS		After APS	
	T_g / °C	T_d / °C	T_g / °C	T_d / °C
Mg glass	402	433	191	231
Ba glass	370	405	163	208

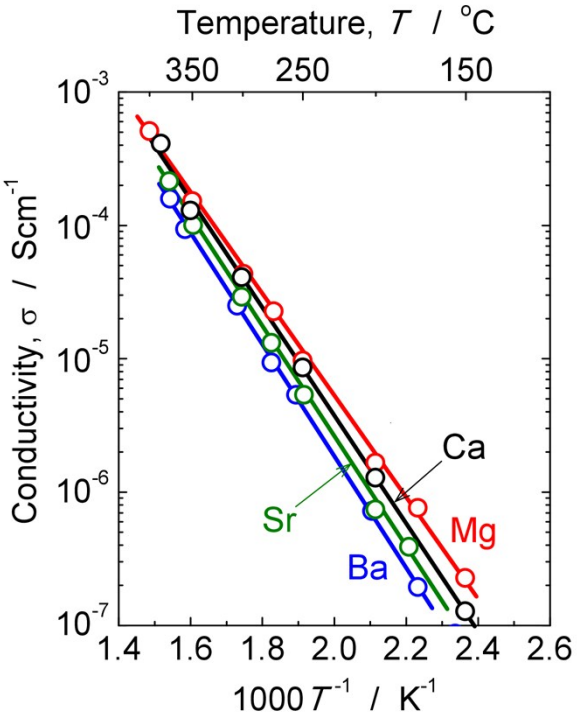

Figure S1 Electrical conductivity of the glasses before APS. The red, green, black, and blue circles and lines represent data obtained for the Mg, Ca, Sr, and Ba glass, respectively.

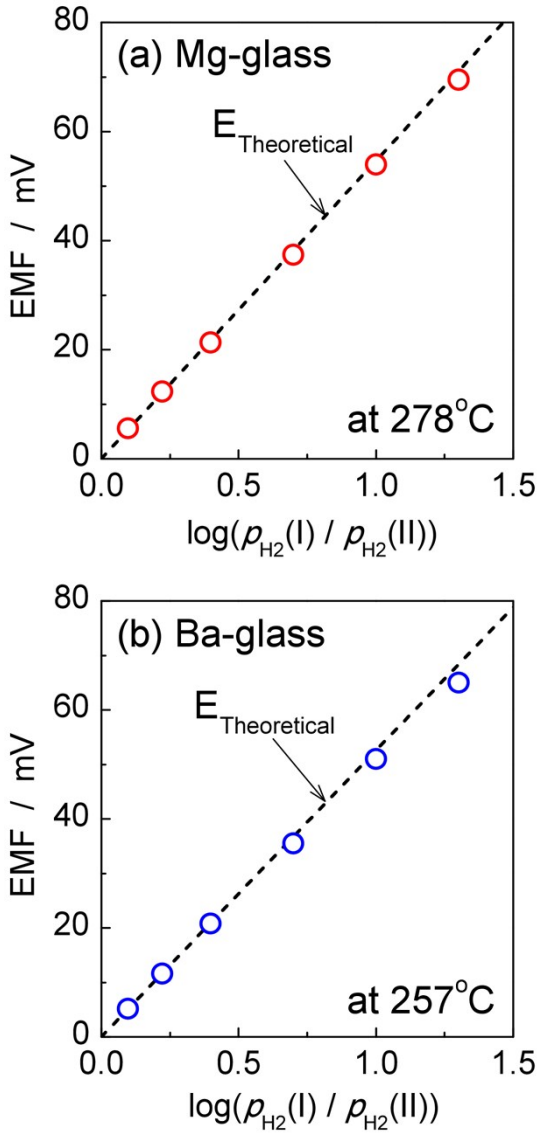

Figure S2 Emf as a function of logarithmic p_{H2} ratio of gas (I) to gas (II) of the hydrogen concentration cell measured at (a) 278 °C for the Mg glass and (b) 257 °C for the Ba glass. Gas (I) was constant at 100% H_2 gas. The dashed black line represents the theoretical emf determined using the Nernst equation, $E = \frac{RT}{2F} \ln\left(\frac{p_{H2}(\mathrm{I})}{p_{H2}(\mathrm{II})}\right)$.