Preparation of SiO_2-TiO_2-ZrO_2-P_2O_5-Bi_2O_3 electrolyte membrane for intermediate temperature fuel cell

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Solid proton conducting materials are attracted much attention due to have potential practical applications in clean energy fields such as fuel cells, batteries, sensors, and electrolysis, etc. There are many advantages to operate fuel cells at high temperature such as to reduce poisoning of electrocatalyst by CO, improve the heat management in the fuel cell, and increase the reactions and diffusion kinetics.
In this present study, we have successfully synthesized SiO_2-TiO_2-ZrO_2-P_2O_5-Bi_2O_3 electrolyte membrane by using sol-gel technique and investigated the performance and effect of CO for the application of intermediate temperature fuel cell.