



Fig. 1 Material and method synthesis and characterization of Nafion-SiO₂-PWA composite membrane

2.2. Single cell of PEMFC

The MEA is combined with bi-polar plate, current collector, and end plate with arrangement of end plate, current collector, bi-polar plate, MEA, bi-polar plate, current collector and end plate respectively form single cell proton exchange membrane fuel cell (SCPMEFC) system. The arrangement of SCPMEFC is figured out by Figure 2 and the specification of every part is pointed out by Tabel 1. The components of SCPMEFC as shown in Fig. 1 include (1) current collector (CC), (2) bipolar plate (BP), (3) gas diffusion layer (GDL), (4) anode (A), (5) electrolyte membrane (EM) and (6) cathode (C). The specification of each component of SCPMEFC have been presented in [Mahreni et al. 2009][5].