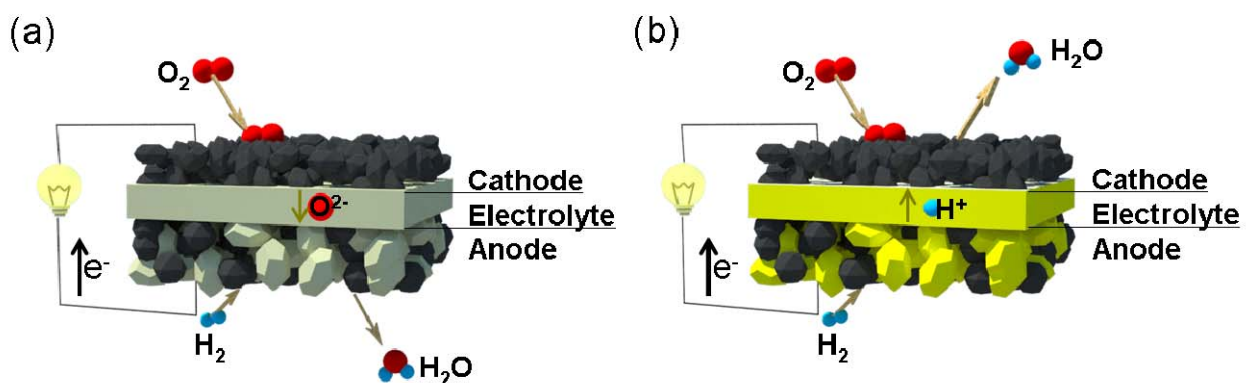


# **Supporting Information**

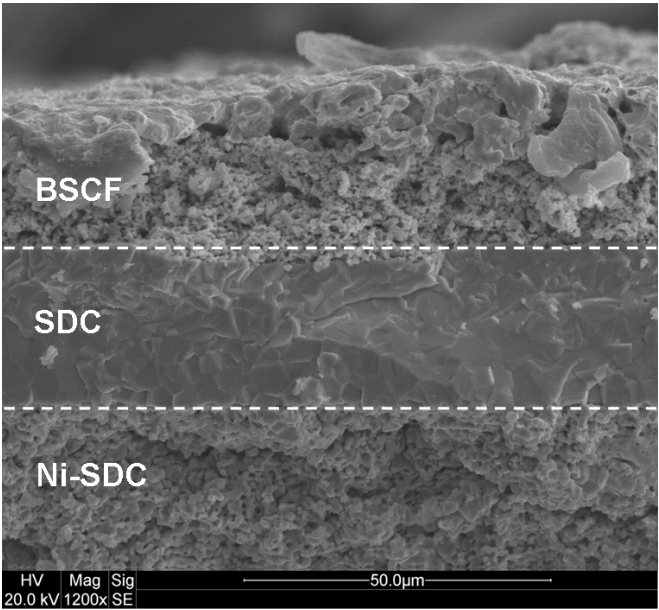
**Solid oxide fuel cells with both high voltage and power output by  
utilizing beneficial interfacial reaction**

**Chao Su, Zongping Shao, Ye Lin, Yuzhou Wu and Huanting Wang**

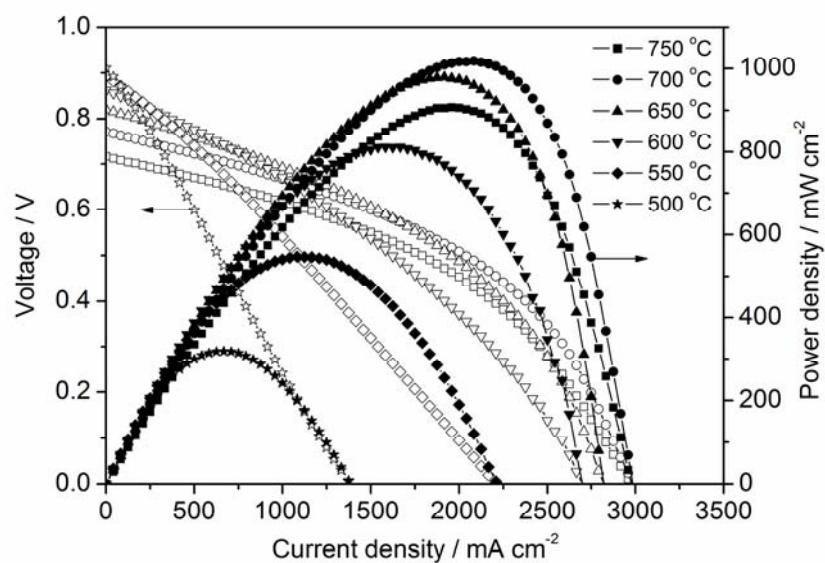
## Supplementary Figures



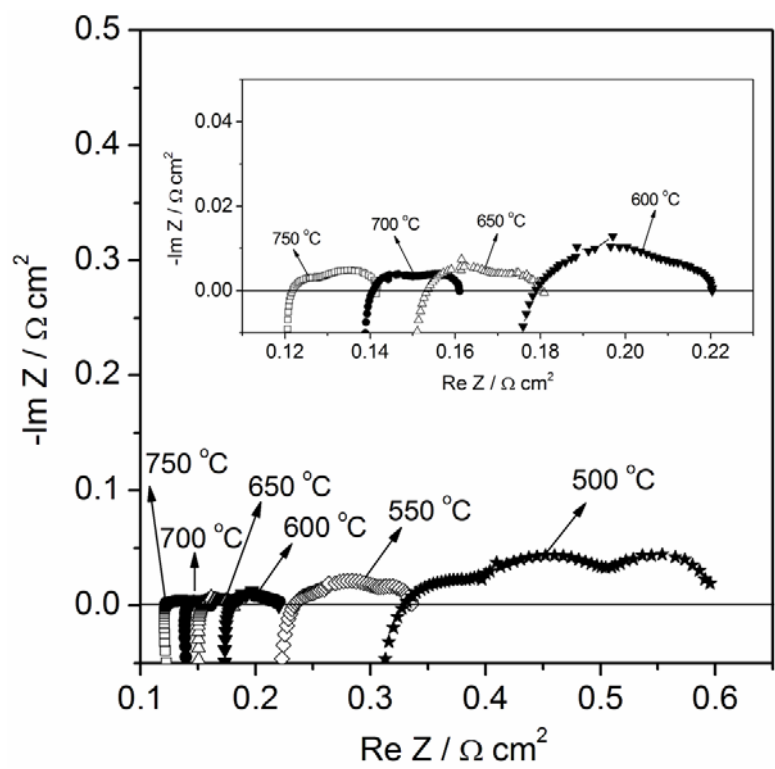
**Fig. S1** (a) Schematic of the oxygen-ionic conducting SOFC operating principle. (b) Schematic of the proton-conducting SOFC operating principle.



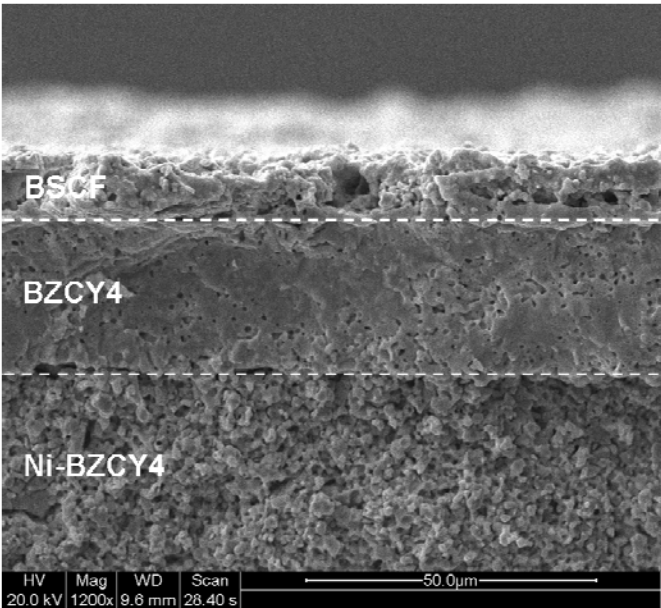
**Fig. S2** The SEM image of the cell with the configuration of Ni-SDC|SDC|BSCF from the cross-sectional view.



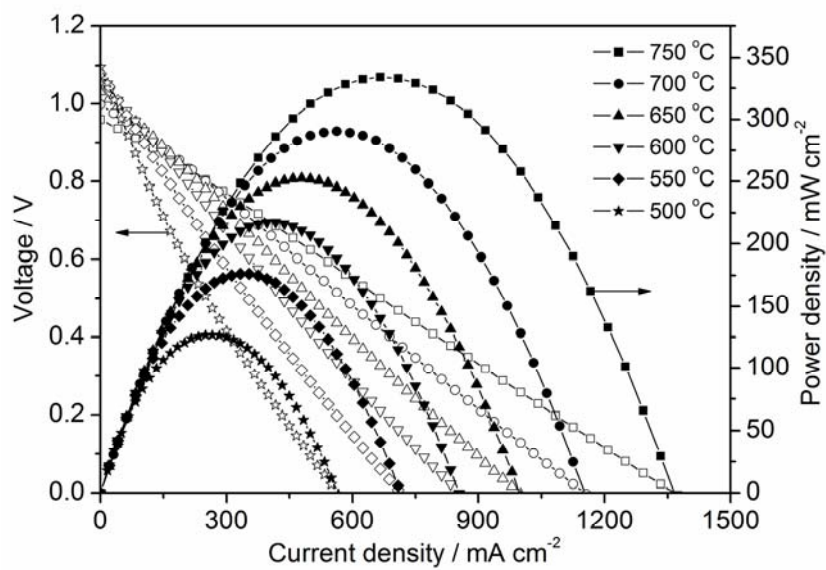
**Fig. S3** The  $I-V$  and  $I-P$  polarization curves of the Ni-SDC|SDC|BSCF cell at various temperatures with 3% water humidified hydrogen as fuel and ambient air as the cathode atmosphere.



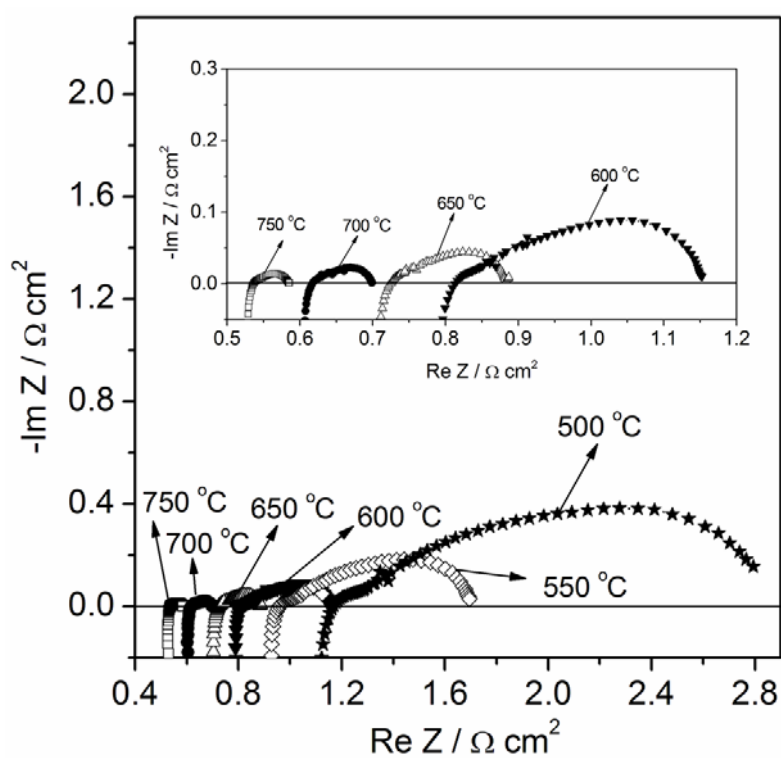
**Fig. S4** The electrochemical impedance spectroscopies of the Ni-SDC|SDC|BSCF cell tested under open circuit condition at various temperatures.



**Fig. S5** The SEM image of the cell with the configuration of Ni-BZCY4|BZCY4|BSCF from the cross-sectional view.



**Fig. S6** The *I-V* and *I-P* polarization curves of the Ni-BZCY4|BZCY4|BSCF cell at various temperatures with 3% water humidified hydrogen as fuel and ambient air as the cathode atmosphere.



**Fig. S7** The electrochemical impedance spectroscopies of the Ni-BZCY4|BZCY4|BSCF cell tested under open circuit condition at various temperatures.