

Electronic supplementary information for

LSCF-WO₃ semiconductor composite electrolyte for low temperature solid oxide fuel
cell

Xiaoqian Jin ^a, Cui Gao ^a, Zhi Liu ^a, Wenjing Dong ^{a,b}, Chen Xia ^{a,*}, Baoyuan Wang ^{a,b}, Hao Wang ^{a,b},
Xunying Wang ^{a,b,*}

^a *School of Microelectronics and Faculty of Physics and Electronic Science, Hubei University, Wuhan 430062,
China*

^b *Hubei Yangtze Memory Laboratories, Wuhan 430205, China*

* *Corresponding Author: wangxunying@hubu.edu.cn (X. Wang), chenxia@hubu.edu.cn (C. Xia)*

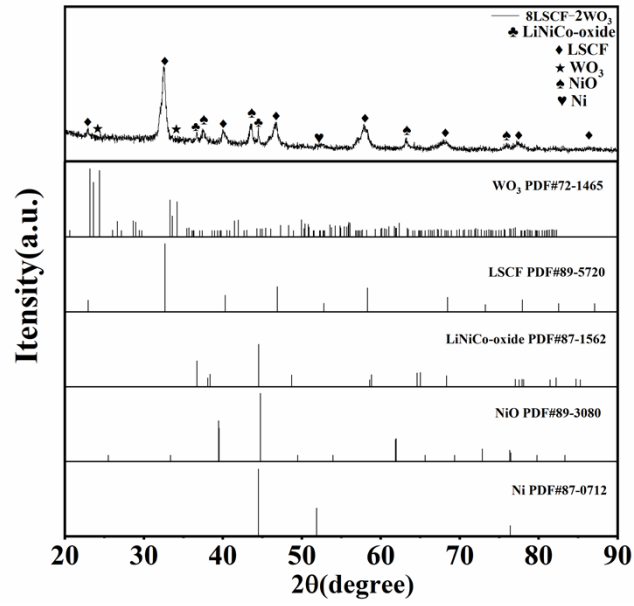


Fig.S1. XRD pattern of the 8LSCF-2WO₃ electrolyte in the tested solid oxide fuel cell

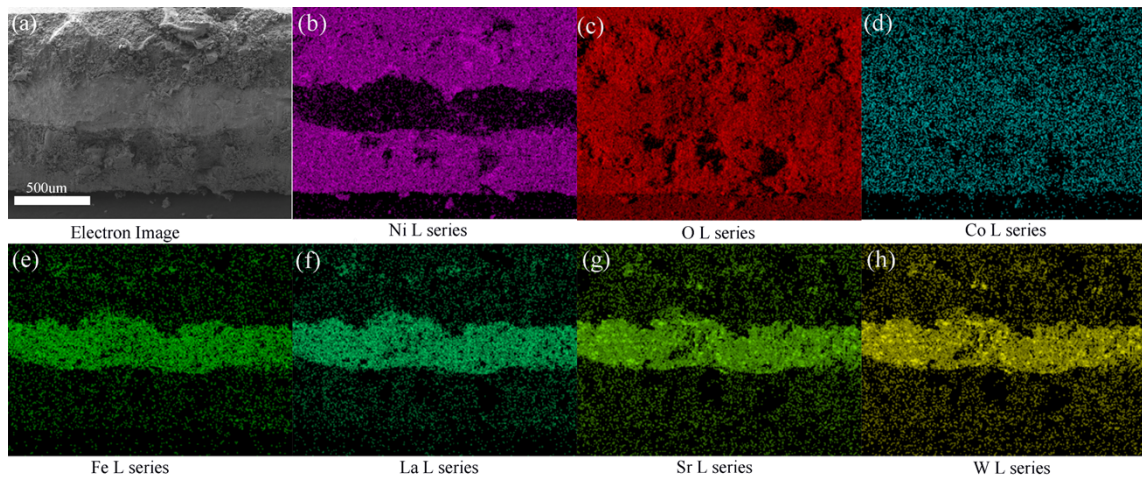


Fig.S2. The cross-sectional elemental mappings of the fuel cell: (a) SEM image, (b) Ni, (c)O, (d) Co, (e) Fe, (f)La,

(g) Sr,(h) W.

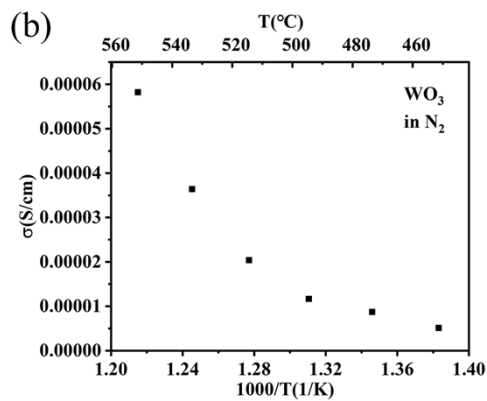
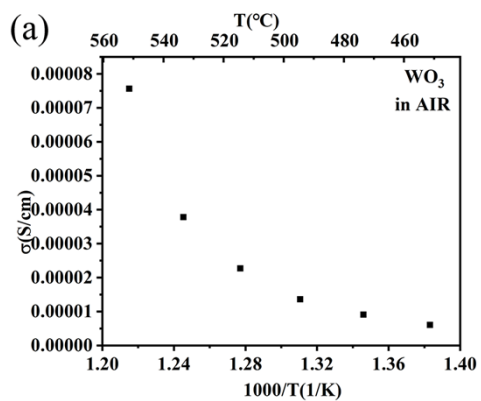


Figure S3 Conductivity of WO₃ in (a) Air and (b) N₂ atmosphere.

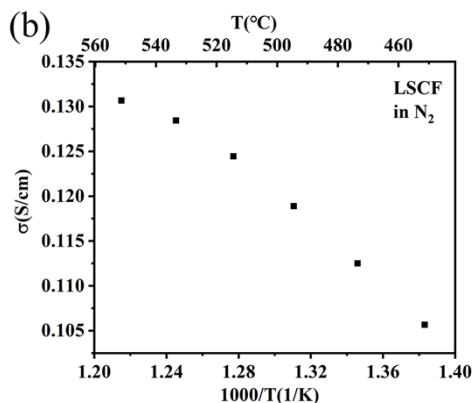
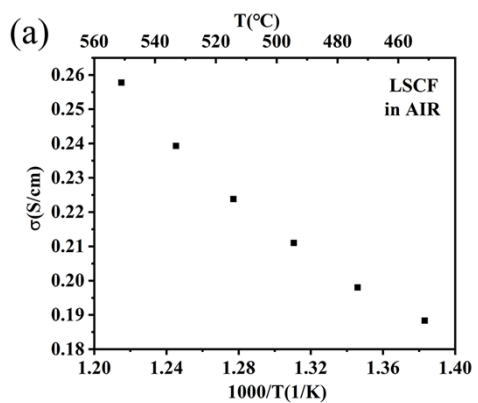


Figure S4 Conductivity of LSCF in (a) Air and (b) N₂ atmosphere.