Supporting Informations

Spontaneously Polarized Lithium-Doped Zinc Oxide Nanowires as Photoanode for Electrical Water Splitting

Hyun Joo Lee[1,†], Sung-Ho Shin[2,†], Ki Tae Nam,[3] Junghyo Nah[2,*], Min Hyung Lee[1,*]

[1]*Department of Applied Chemistry, Kyung Hee University, Yongin, Gyeonggi, 17104, Korea.*
[2]*Department of Electrical Engineering, Chungnam National University, Daejeon, 34134, Korea.*
[3]*Department of Material Science and Engineering, Seoul National University, Seoul, 08826, Korea.*

[†] These authors are contributed equally.

*Corresponding authors: jnah@cnu.ac.kr, minhlee@khu.ac.kr

Table S1. Bandgap of Li-doped ZnO NWs with different polarization.

Sample	E_g (eV)
Unpoled	**3.23**
Positively poled	**3.24**
Negatively poled	**3.13**

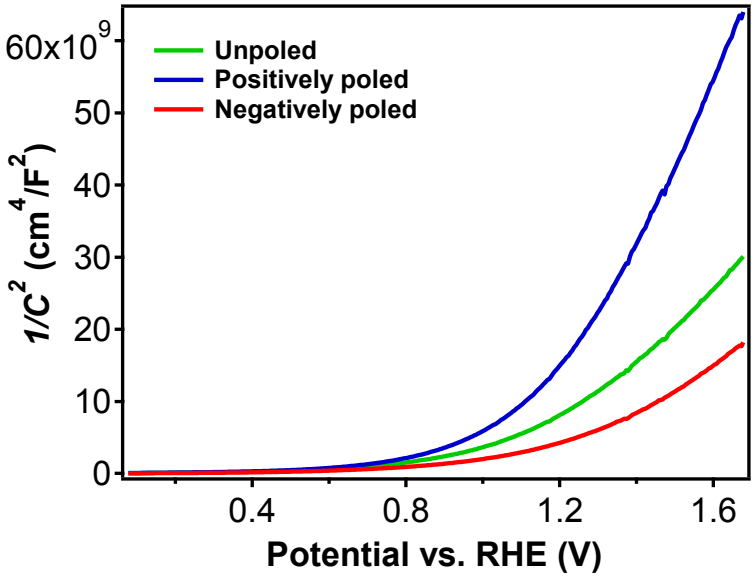

Figure S1. Mott-Schottky plots of Li-doped ZnO NW PECs in the dark at frequency of 1kHz.

Table S2. Impedance parameters of Li-doped ZnO depending on poling condition

Sample	R_s (Ω)	C_{ZnO} (F)	R_{CT} (Ω)
Unpoled	12.11	4.44×10^{-5}	50,080
Positively poled	6.759	2.17×10^{-5}	33,702
Negatively poled	12.8	2.52×10^{-5}	100,100