

Supporting Information

Enhanced Electrochromic Performance by Anodic Polarization in Nickel Oxide Films

Xing Guo ^{1,2}, Wei Wang ^{1,2,*} and Rui-Tao Wen ^{3,*}

¹ Shi-changxu Innovation Center for Advanced Materials, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, 110016, China

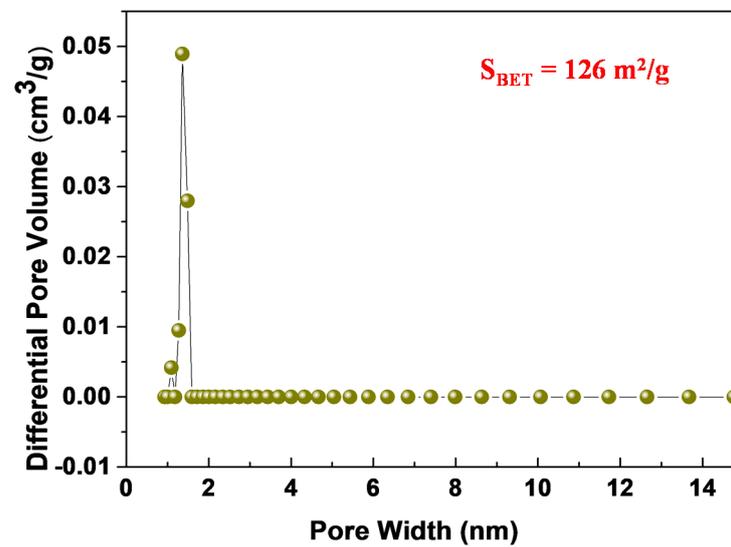
² School of Materials Science and Engineering, University of Science and Technology of China, Shenyang, 110016, China

³ Department of Materials Science and Engineering, Southern University of Science and Technology, Shenzhen, 518055, China

* Correspondence: wenrt@sustech.edu.cn (R.-T.W.), wei.wang@imr.ac.cn (W.W.).

Table 1. different paraments included in the process of e-beam evaporation.

	Evaporation rate ($\text{\AA}/\text{s}$)	Oxygen Flow (SCCM)	Pressure (Pa)	Current (mA)
1	1.5	30.0	3.5×10^{-2}	200.0
2	1.5	35.0	4.0×10^{-2}	220.0
3	1.5	45.0	4.5×10^{-2}	240.0
4	3.0	30.0	4.0×10^{-2}	240.0
5	3.0	35.0	4.5×10^{-2}	200.0
6	3.0	45.0	3.5×10^{-2}	220.0
7	4.0	30.0	4.5×10^{-2}	220.0
8	4.0	35.0	3.5×10^{-2}	240.0
9	4.0	45.0	4.0×10^{-2}	200.0

**Figure 1.** The specific surface area of NiO films prepared by e-beam evaporation.

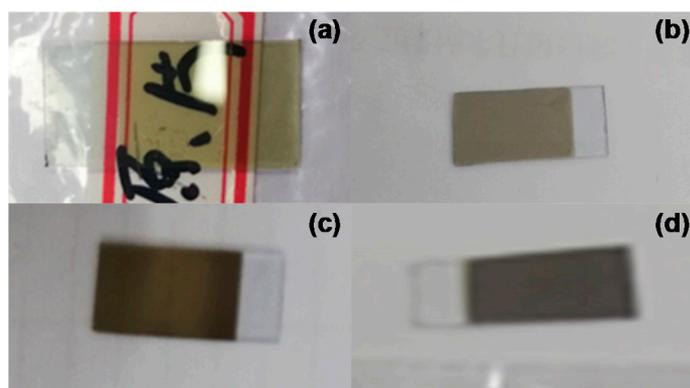


Figure 2. The photograph images of NiO films with the original films (a) and different times of anodic polarization: two times (b), four times (c) and eight times (d).

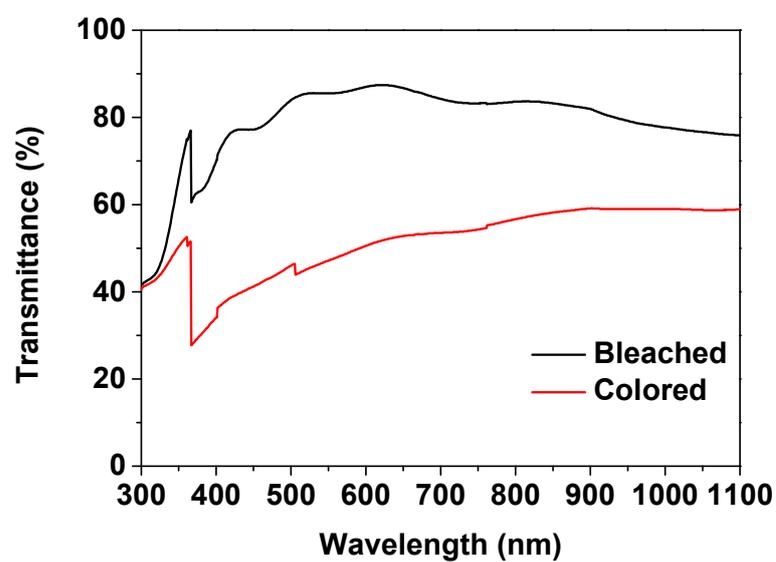


Figure 3. Transmittance spectra of NiO thin films in the full visible region.

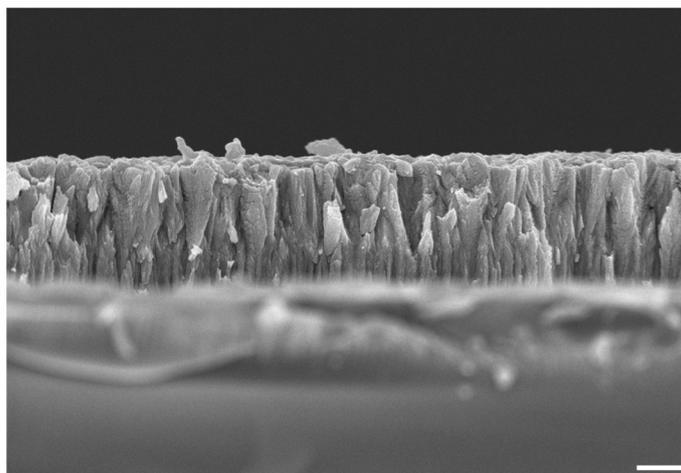


Figure 4. The cross-section images obtained by SEM. The scale bar is 400 nm.

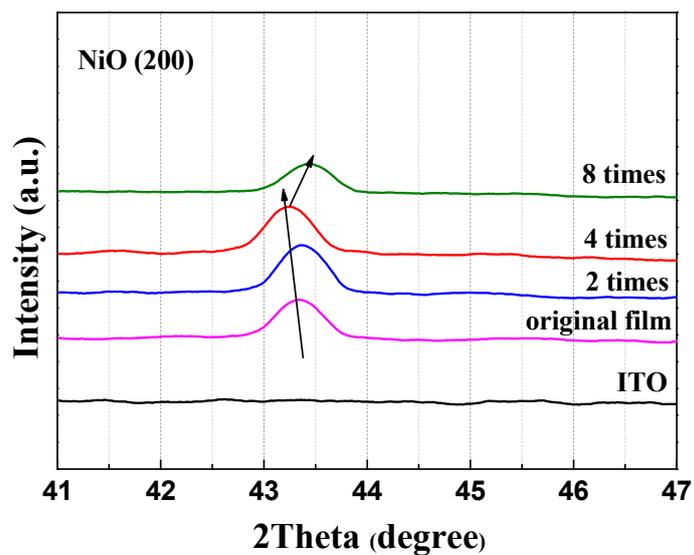


Figure 5. The dynamic change of (200) planes during the anodic polarization process.

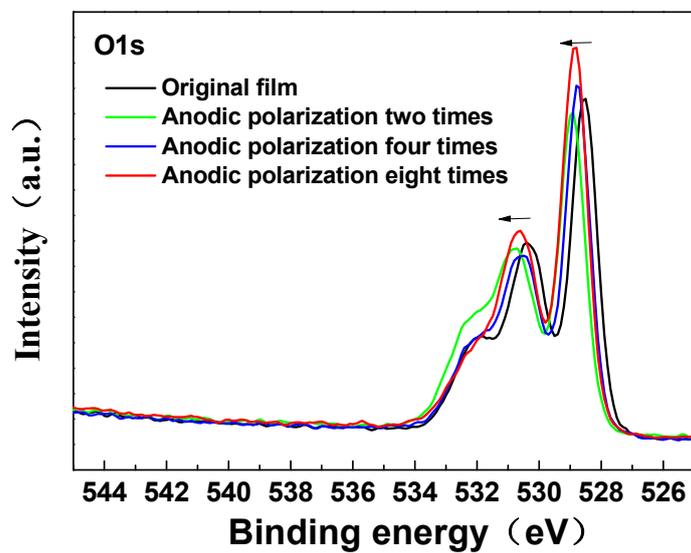


Figure 6. The O1s XPS spectra of the original and polarization-treated NiO films with different times.

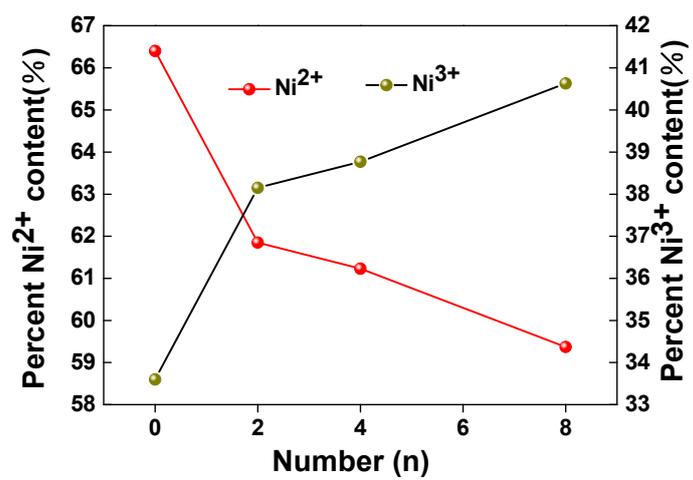


Figure 7. The percentage of Ni²⁺ and Ni³⁺ as functions of anodic polarization numbers.