

Supplementary Information

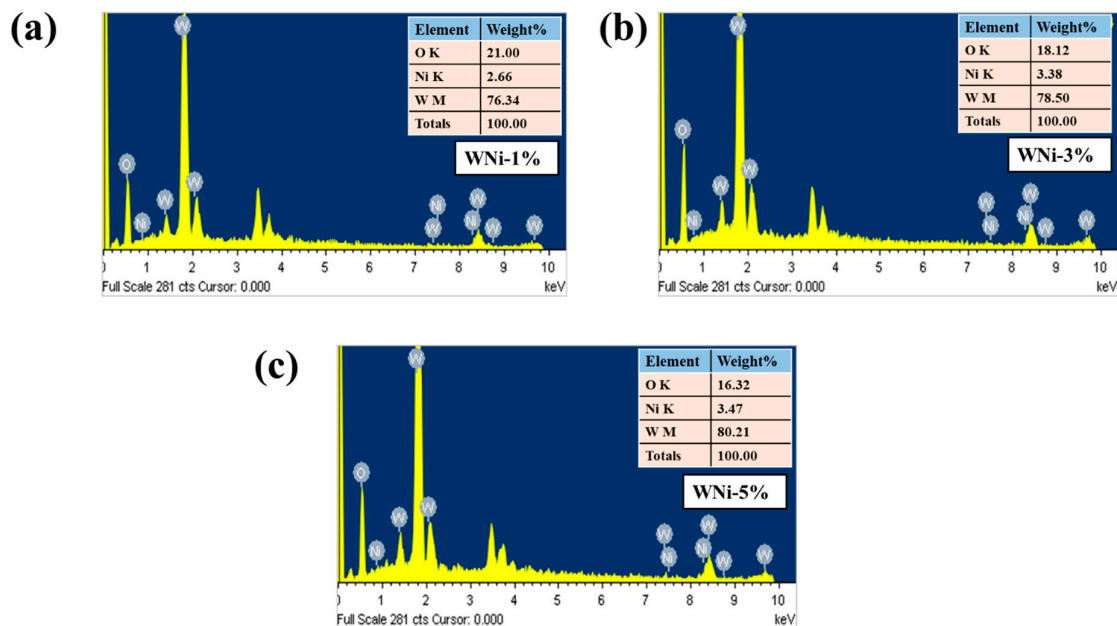


Figure S1. EDS spectra and mapping analysis image of the WNi-1%, WNi-3%, and WNi-5% thin films.

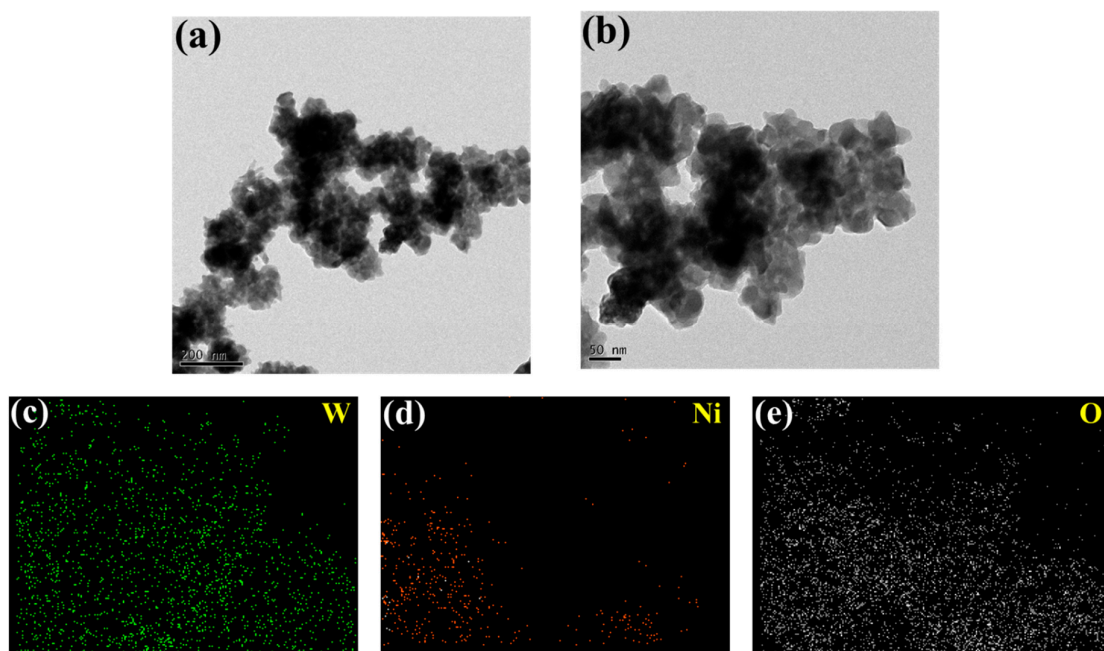


Figure S2. Transmission electron microscopy images of WNi-3% thin film at (a) 200 nm and (b) 50 nm, EDS elemental mapping of (c) W, (d) Ni, (e) O.

Table S1. Comparative parameters of electrodeposited Ni doped WO₃ films with the reported literature and present work of electrochromic performance.

| Sr. No. | Material | Electrolyte | ΔT (%) | CE | Ref. |
|---------|--------------------------|--|----------------|--------------------------|--------------|
| 1 | Ni doped WO ₃ | 1 M LiClO ₄ +PC | 86 | 60.5 cm ² /C | [42] |
| 2 | Ni doped WO ₃ | EL-72 gel | 78.31 | 60.62 cm ² /C | [43] |
| 3 | a-WO ₃ | 1 M LiClO ₄ +PC | 50.4 | 54.7 cm ² /C | [44] |
| 4 | NiO-WO ₃ | 0.5 M LiClO ₄ and 0.05M Ferrocene | 84 | 55.2 cm ² /C | [45] |
| 5 | Ni-WO ₃ | 1M LiClO ₄ +PC | 61 | 68.5 cm ² /C | [24] |
| 6 | Ce-WO ₃ | PVA gel | 62.8 | 76.9 cm ² /C | [46] |
| 7 | Ni-WO ₃ | 1M LiClO ₄ +PC | 81.90 | 75.12 cm ² /C | Present Work |