

## Supporting Information

### **Tungstate nanosheet ink as a photonless and electroless chromic device**

Masahiro Miyauchi,<sup>\* a, b</sup> Akihiko Kondo,<sup>a</sup> Daiki Atarashi,<sup>a</sup> Etsuo Sakai<sup>a</sup>

<sup>a</sup> Department of Metallurgy and Ceramics Science, Graduate School of Science and Engineering, Tokyo Institute of Technology, 2-12-1-S-7, Ookayama, Meguro-ku, Tokyo 152-8552, Japan

<sup>b</sup> Precursory Research for Embryonic Science and Technology (PRESTO), Japan Science and Technology Agency (JST), 4-1-8 Honcho Kawaguchi, Saitama 332-0012, Japan

Email: [mmiyauchi@ceram.titech.ac.jp](mailto:mmiyauchi@ceram.titech.ac.jp)

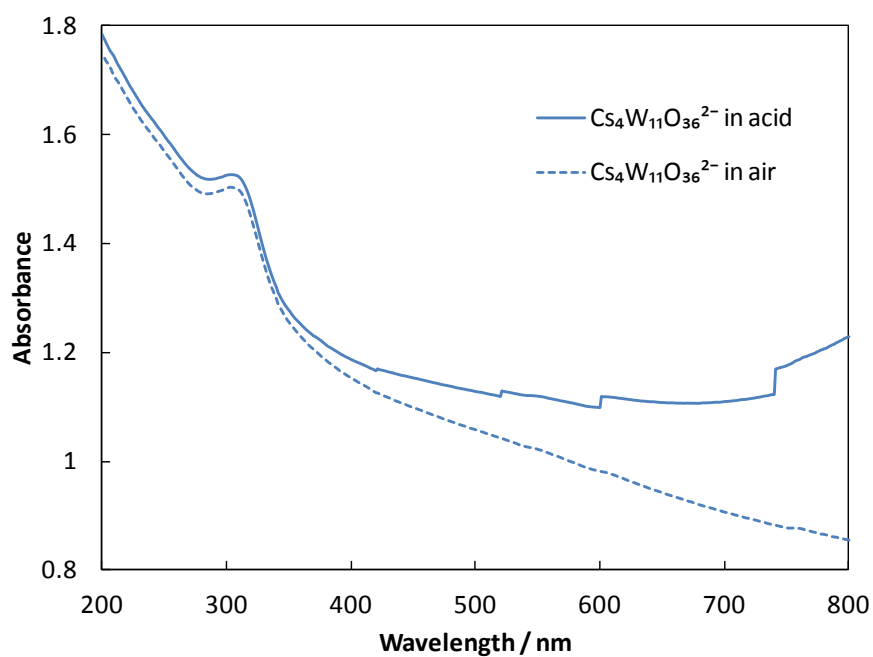
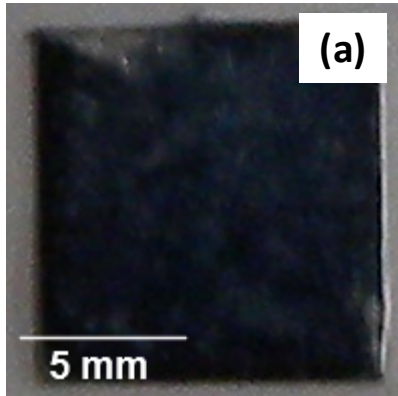
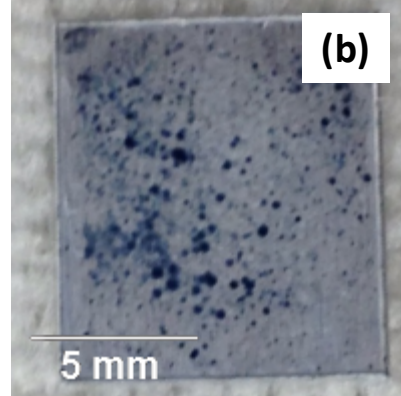


Fig. S1 UV-Vis spectra measured by reflection mode

Absorption spectra of thin films were recorded by a reflectance mode without using integration sphere unit. We could clearly observe the color change without using diffuse reflectance method. Absorbance curve after dipping in acid was discontinuous, since we scanned from the longer wavelength region and the film was decolorized during the scanning.



Thickness: 500 nm



Thickness: 2  $\mu\text{m}$

Fig. S2 Photos of thin films of cesium tungstate nanosheet after coloration. Thicknesses are 500 nm (a) and 2  $\mu\text{m}$  (b), respectively.

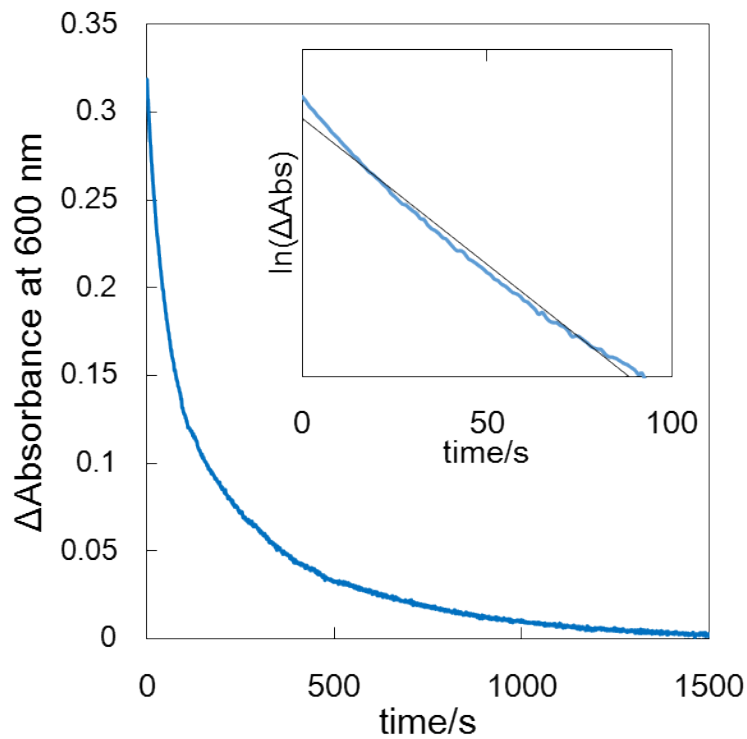


Fig. S3 Decay in color (at 600 nm) for thin films in air after the dipping in alkali solution (pH: 10). Inset shows the relationship between natural logarithm and time.