## Porosity-dependent photoelectrochemical activity of double-layered $TiO_2$ thin films deposited by spin-coating method

Kuralay Rustembekkyzy<sup>1</sup>, Amir Zholdasbekov<sup>1</sup>, Alshyn Abduvalov<sup>2</sup>, Marat Kaikanov<sup>2</sup>, Timur Sh. Atabaev<sup>1,\*</sup>

<sup>1</sup> Department of Chemistry, Nazarbayev University, Astana 010000, Kazakhstan <sup>2</sup> Department of Physics, Nazarbayev University, Astana 010000, Kazakhstan

Corresponding author: Timur Sh. Atabaev (timur.atabaev@nu.edu.kz), Tel: +7-7172-70-60-26

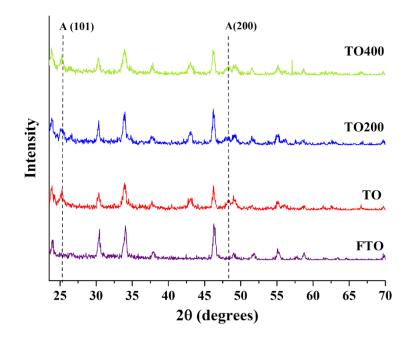


Figure S1. XRD patterns of prepared films and FTO for comparison

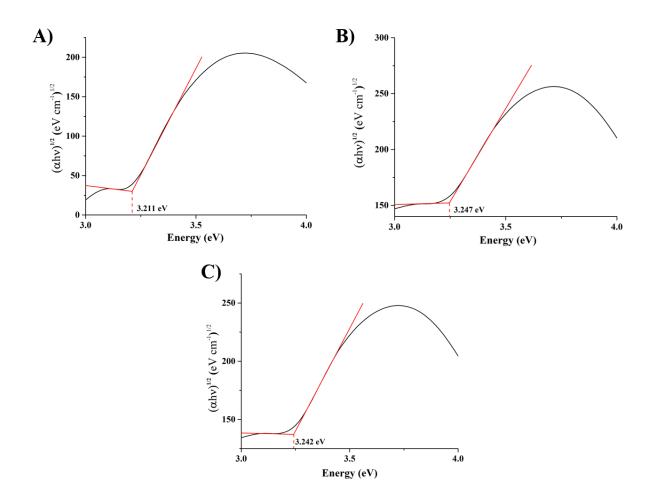


Figure S2. Tauc plots and calculated bandgaps of TO (A), TO200 (B), and TO400 (C) films.