

Electronic Supporting Information

Physical Vapor Deposited highly oriented V₂O₅ thin films for Electrocatalytic Oxidation of Hydrazine

Shrividhya Thiagarajan^{a,b}, Mahalingam Thaiyan^a and Ravi Ganesan^{a*}

^aSchool of Physics, Alagappa University, Karaikudi, India-630004

^bDepartment of Physics, Kalasalingam University, Krishnankoil, India 626 126

*Author for correspondence (e-mail: gravicrc@gmail.com; raviganesa@rediffmail.com Telephone: +91-04565-225206; Fax: +91-04565-225202)

Table S1 Frequency assignment for Micro-Raman data

Wavenumber (cm ⁻¹)	Remarks	Assignment	Modes
285	Bending vibration of V=O _v bond (<i>d</i> ₁)	δ(V=O)b	B _{2g}
305	Bending vibration of V-O bond (<i>d</i> ₄)	δ(V-O)b	A _g
406	Bending vibration of V=O bond (<i>d</i> ₁)	δ(V=O)b	A _g
483	Bending vibration of V–O–V bond (<i>d</i> ₂) related to the deformation involving displacement of the bridging oxygen atom along the z-direction	δ(V-O-V)b	B _{2g}
525	Stretching vibration of V-O bond (<i>d</i> ₄)	ν(V-O)s	A _g
701	Asymmetric bond stretching of V-O-V bridging bond (<i>d</i> ₃)	ν(V-O-V)s	B _{1g}
996	Stretching of vanadium atoms connected to oxygen atoms V=O bond (<i>d</i> ₁) (terminal oxygen)	ν(V=O)s	A _g

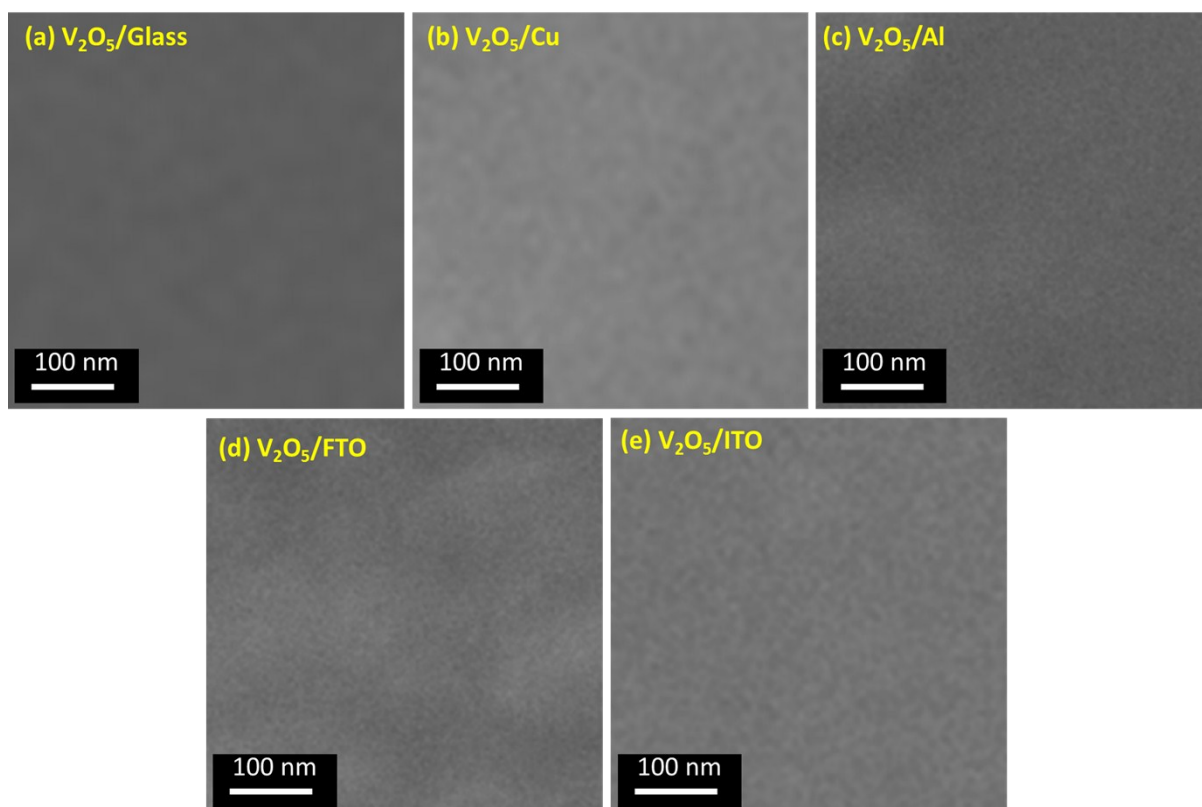


Fig. S1. SEM micrographs of V_2O_5 thin films deposited on (a) Glass (b) Cu (c) Al (d) ITO and (e) FTO substrates

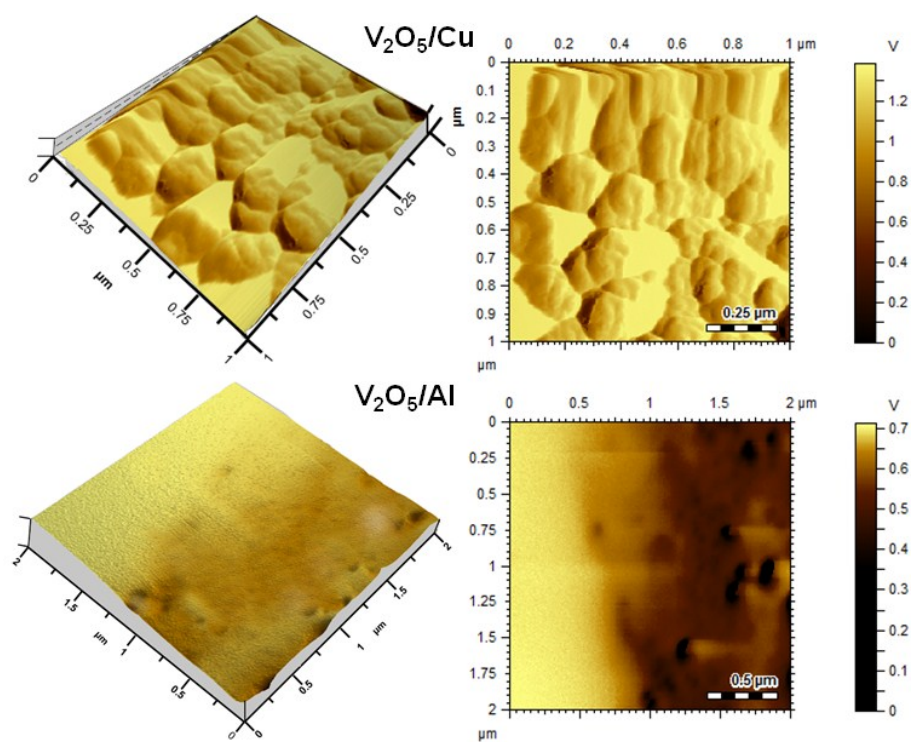


Fig. S2. AFM topographs of V_2O_5 thin films deposited on Cu and Al substrates

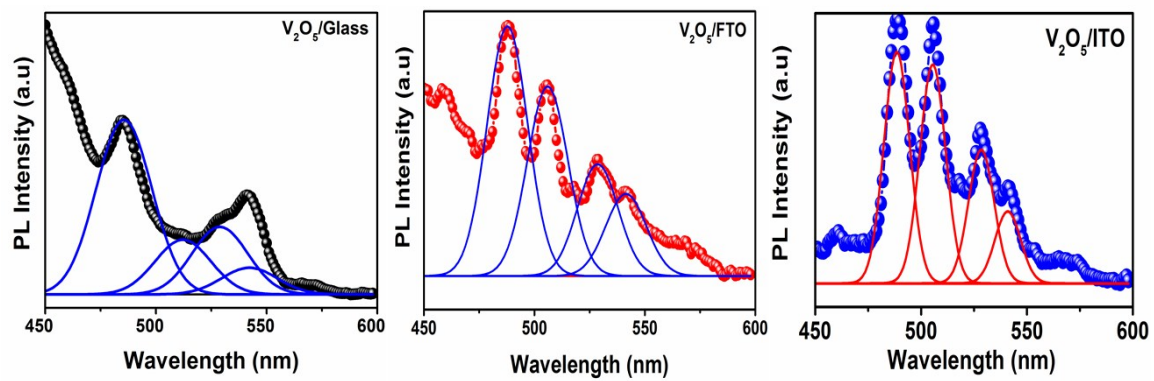


Fig. S3. Gaussian resolved PL spectra for V_2O_5 thin films coated on different substrates

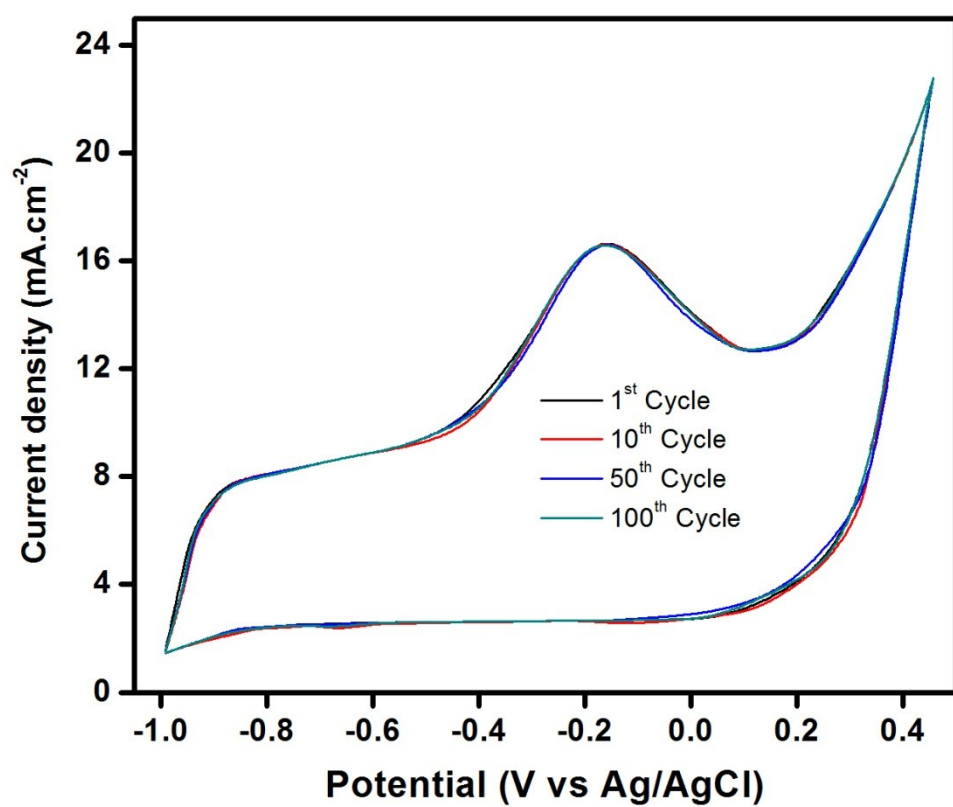


Fig. S4. Cycle stability of V_2O_5 thin film coated on ITO substrate at scan rate of 100 mV/s