

Supporting Information for Publication

Peroxidase-like behavior of Ni thin films deposited by glancing angle deposition
for enzyme-free uric acid sensing

Anuja Tripathi¹, Kenneth D. Harris^{2,3}, Anastasia L. Elias¹

¹*Department of Chemical and Materials Engineering, University of Alberta, Donadeo Innovation Centre
for Engineering, Edmonton, Alberta, T6G 1H9, Canada*

²*National Research Council Canada, Nanotechnology Research Centre, Edmonton, Alberta, T6G 2M9,
Canada*

³*Department of Mechanical Engineering, University of Alberta, Edmonton, Alberta, T6G 1H9, Canada*

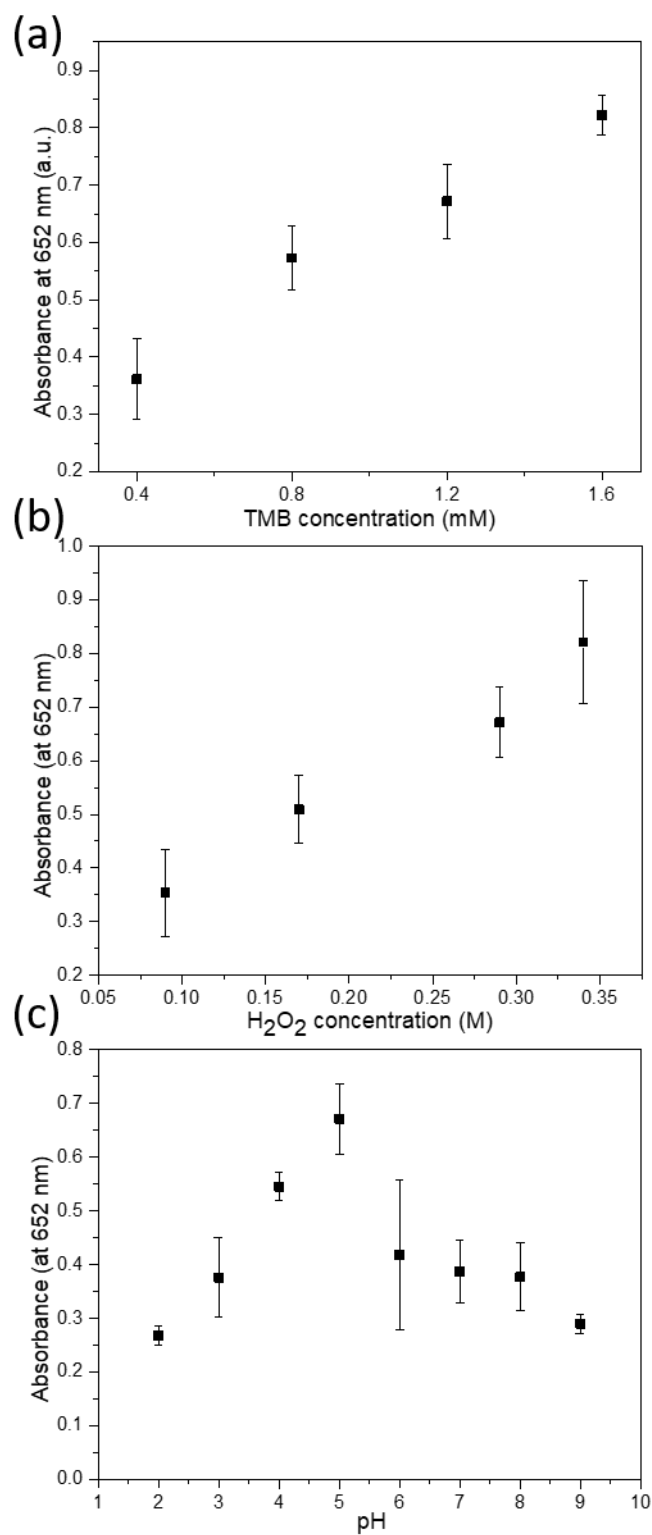


Figure S1. Peak absorbance at 652 nm for TMB solutions oxidized in the absence of uric acid: (a) the TMB concentration is varied at a fixed pH (pH 5) and H₂O₂ concentration (0.29 M); (b) the H₂O₂ concentration is varied at a fixed pH (pH 5) and TMB concentration (1.2 mM); and (c) the pH is varied at fixed TMB and H₂O₂ concentrations (1.2 mM and 0.29 M, respectively). Spectra

were recorded after 15 minutes of contact time with the Ni GLAD film, which was removed before measurement.

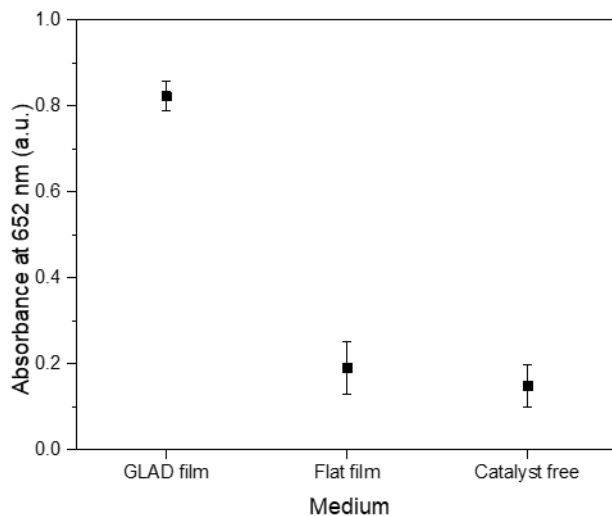


Figure S2. Comparison of peak absorbance at 652 nm for aqueous solutions of 1.6 mM TMB as oxidized by a GLAD Ni film, a flat Ni film and a catalyst-free solution in the presence of 0.29 M H_2O_2 at pH 5.

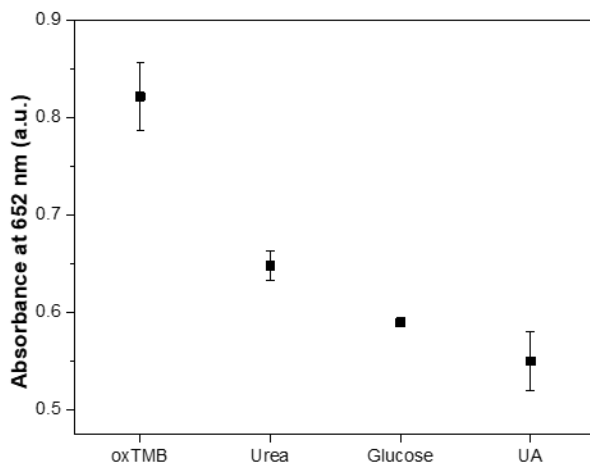


Figure S3. Comparison of peak absorbance at 652 nm for oxTMB solutions before (labeled oxTMB) and after the addition of 446 μM of urea, glucose, or uric acid (UA).