Utilizing Pulsed Laser Deposition Lateral Inhomogeneity as a Tool in Combinatorial Material Science

David A. Keller,[†] Adam Ginsburg,[†] Hannah-Noa Barad,[†] Klimentiy Shimanovich,[†] Yaniv Bouhadana,[†] Eli Rosh-Hodesh,[†] Ichiro Takeuchi,[§] Hagit Aviv,[†] Yaakov R. Tischler,[†] Assaf Y. Anderson,[†] and Arie Zaban[,†]*

[†] Department of Chemistry, Center for Nanotechnology & Advanced Materials, Bar Ilan University, 5290002 Ramat Gan, Israel

[§] Department of Materials Science and Engineering, University of Maryland, College Park, MD 20742, USA

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Supporting Information

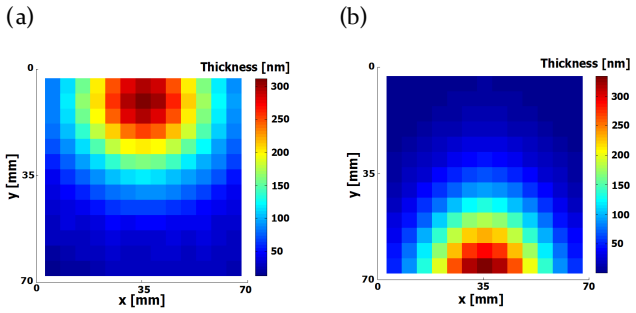
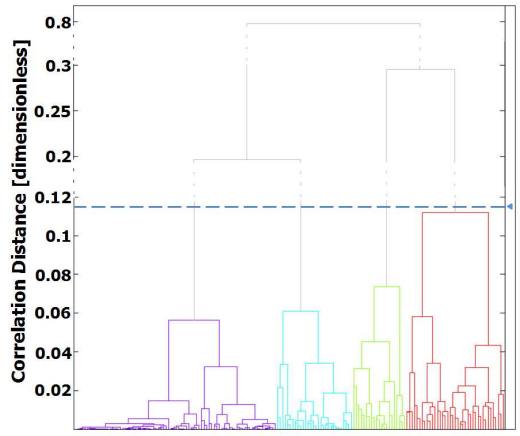


Figure S1. Thickness maps: (a) Thickness profile of the Fe_2O_3 PLD deposition. (b) Thickness profile of the Nb_2O_5 PLD deposition. The Fe_2O_3-Nb_2O_5 combinatorial library is composed of the sum of these two profiles, yielding the actual thickness profile (Figure 1c).

(a)



(b)

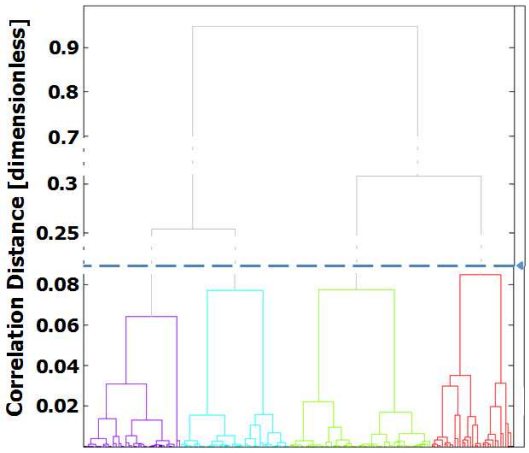


Figure S2. (a) Hierarchical clustering analysis of the Raman data: A dendrogram in which each Raman spectrum is represented by a vertical line at the base of the plot. The clustering of Raman spectra into groups is indicated by horizontal lines at the correlation distance between the groups. The correlation distance threshold used to create the four colored groups (≈0.118) is indicated by a horizontal blue dashed line. (b) Hierarchical clustering analysis of the absorptance data: A dendrogram for each absorptance spectrum is represented by a vertical line at the base of the plot. The clustering of absorptance spectra into groups is indicated by horizontal lines at the correlation distance between the groups. The correlation distance threshold used to create the four colored groups (≈0.09) is indicated by a horizontal blue dashed line.

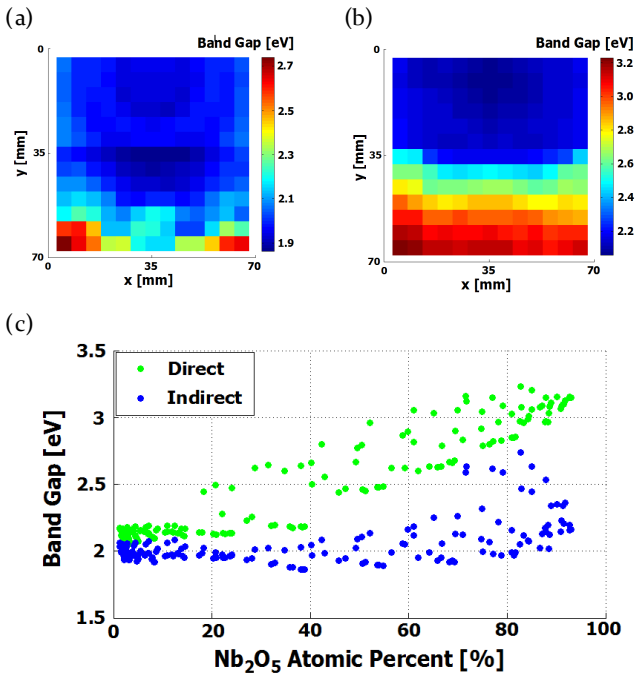


Figure S3. Bandgap calculated using Tauc plot: (a) Indirect bandgap map. (b) Direct bandgap map. (c) Direct and indirect bandgaps as a function of composition.