

Supplementary Materials

Fabrication and Optimization of Bilayered Nanoporous Anodic Alumina Structures as Multi-Point Interferometric Sensing Platform

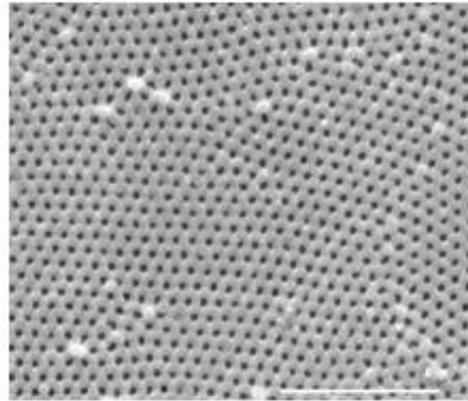
Mahdiah Nemati ¹, Abel Santos ^{1,2,3} and Dusan Losic ^{1,*}

¹ School of Chemical Engineering, The University of Adelaide, Engineering North Building,
5005 Adelaide, Australia ;

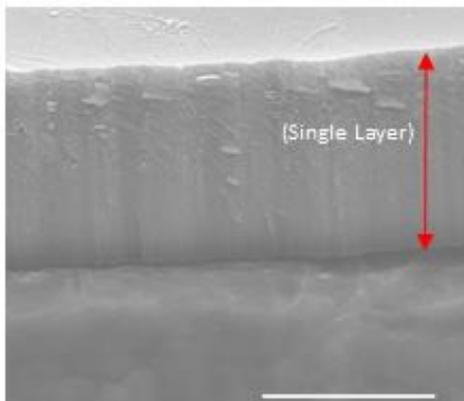
² Institute for Photonics and Advanced Sensing (IPAS), The University of Adelaide, 5005
Adelaide, Australia;

³ ARC Centre of Excellence for Nanoscale BioPhotonics (CNBP), The University of
Adelaide, 5005 Adelaide, Australia;

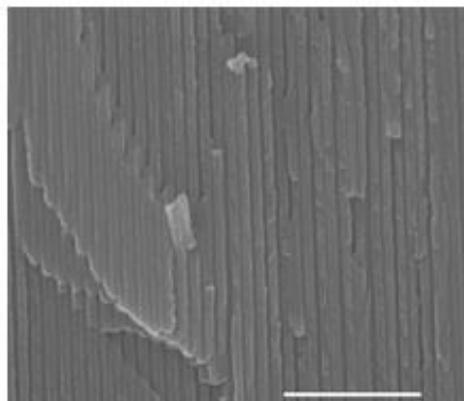
*Correspondence: dusan.losic@adelaide.edu.au



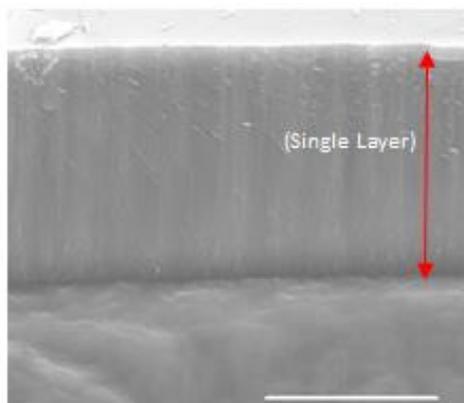
(a)



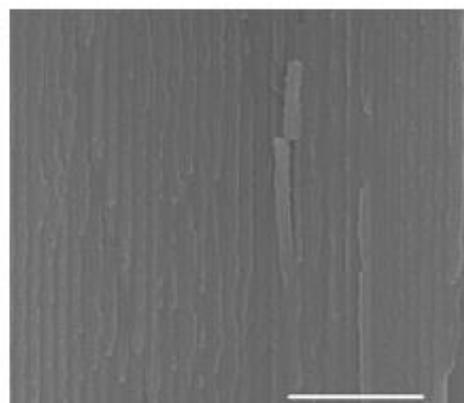
(b)



(c)

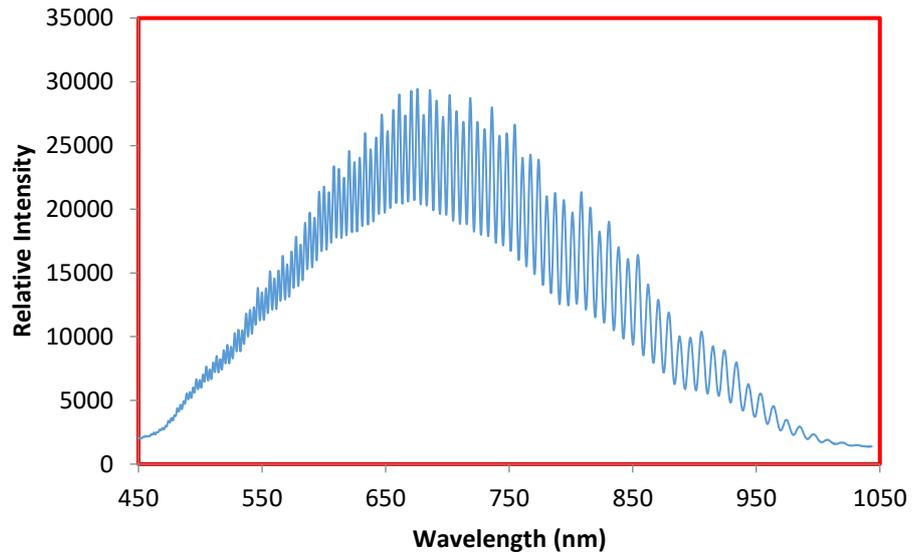


(d)

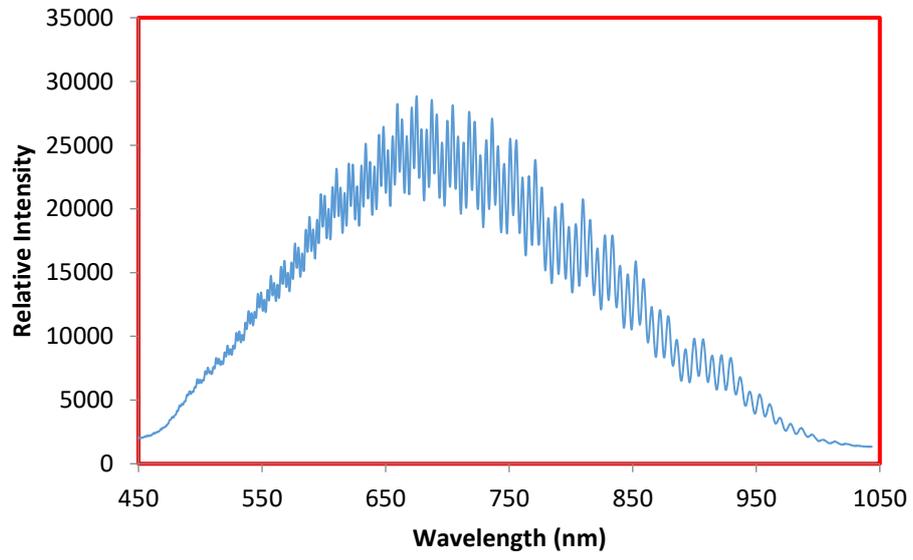


(e)

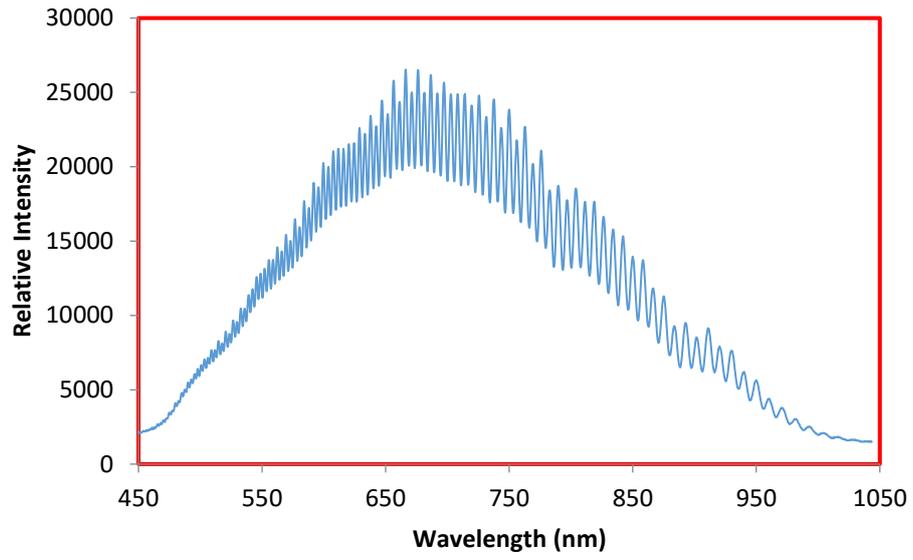
Figure S1. (a) Top view SEM image of a BL-NAA/NAA (scale bar= 1 μ m) showing typical highly ordered NAA pore structures. (h) Cross-section view of NAA₍₁₎, scale bar is 20 μ m. (i) Cross-section view of NAA₍₁₎, scale bar is 1 μ m. (j) Cross-section view of NAA₍₂₎, scale bar is 20 μ m. (k) Cross-section view of NAA₍₂₎, scale bar is 1 μ m. Magnified view of red squares in (c), (e), and (g) show the connection of structural layers where pore diameter of each layer is different. Top layer (I), bottom layer (II) and single layers are marked on images.



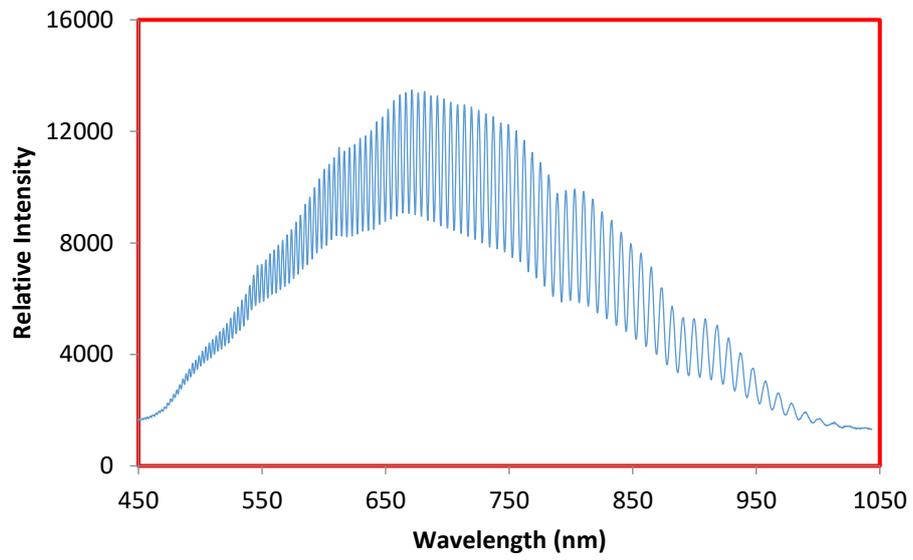
(a)



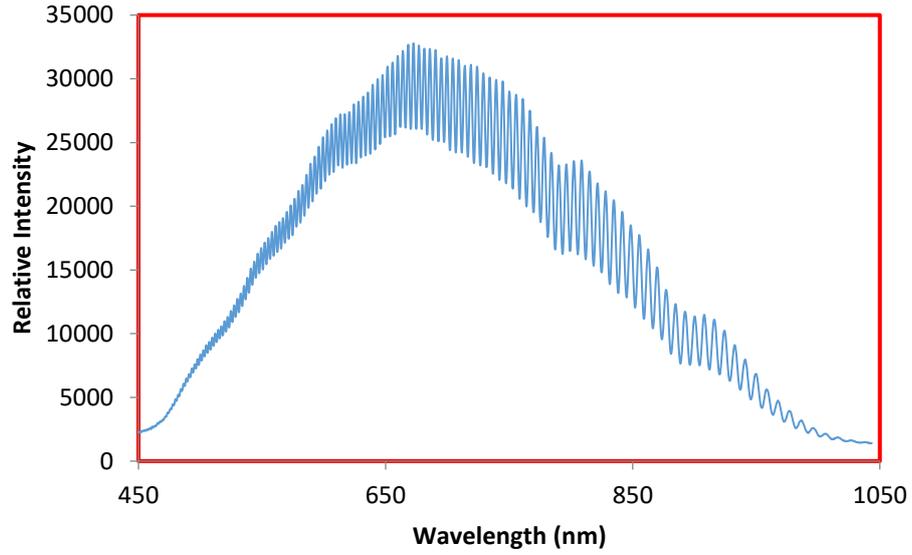
(b)



(c)



(d)



(e)

Figure S2. Optical interference pattern generated from Fabry-Pérot effect for all types of BL-NAAs and NAAs in this study. (a) BL-NAA_(25/75), (b) BL-NAA_(75/25), (c) BL-NAA_(50/50), (d) NAA₍₁₎, (e) NAA₍₂₎. All optical films presented uniform oscillation series in their RfS spectrum.