

Supporting Information

Rational Engineering of Nanoporous Anodic Alumina Optical Bandpass Filters

Abel Santos^{1,2,3*}, Taj Pereira¹, Cheryl Suwen Law¹ and Dusan Losic^{1*}

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

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

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

***E-Mail:** abel.santos@adelaide.edu.au ; dusan.losic@adelaide.edu.au

S1. Effect of Pore Widening Treatment

Figure S1 shows the effect of the pore widening treatment on the position and width of the transmission band of a NAA-BPF produced with an anodisation period of 800 s.

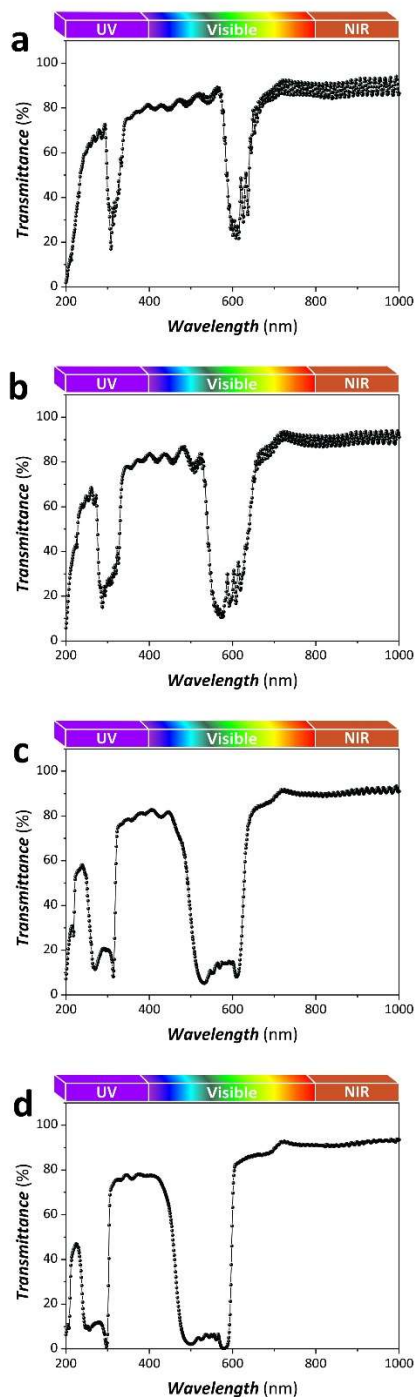


Figure S1. Effect of the pore widening treatment (from 0 to 6 min) on the position and width of the transmission band of a NAA-BPF produced with $T_p = 800$ s, $A_j = 0.420$ mA cm⁻², $J_{min} = 0.28$ mA cm⁻², $J_{max} = 1.12$ mA cm⁻², $N_p = 150$ pulses, $S_{down} = 0.03061$ mA cm⁻² s⁻¹. a) 0 min. b) 2 min. c) 4 min. d) 6 min.

S2. Summary of Results

Table S1 compiles a comprehensive summary of the central position of and the FWHM of the different NAA-BPFs produced in this study.

NAA-BPF	λ_{Band} (nm)	FWHM (nm)
<u>Mono-NAA-BPFs ($t_{pw} = 6$ min)</u>		
NAA-BPF ₅₀₀	334 ± 1	58 ± 1
NAA-BPF ₆₀₀	369 ± 1	58 ± 1
NAA-BPF ₇₀₀	431 ± 1	87 ± 1
NAA-BPF ₈₀₀	502 ± 1	134 ± 1
NAA-BPF ₉₀₀	537 ± 1	103 ± 1
NAA-BPF ₁₀₀₀	617 ± 1	120 ± 1
NAA-BPF ₁₁₀₀	660 ± 1	131 ± 1
NAA-BPF ₁₂₀₀	733 ± 1	138 ± 1
<u>Bi-NAA-BPFs ($t_{pw} = 6$ min)</u>		
NAA-BPF ₅₀₀₋₇₀₀	295 ± 1 (500 s)	97 ± 1 (500 s)
	422 ± 1 (700 s)	35 ± 1 (700 s)
NAA-BPF ₅₀₀₋₉₀₀	292 ± 1 (500 s)	53 ± 1 (500 s)
	534 ± 1 (900 s)	72 ± 1 (900 s)
NAA-BPF ₅₀₀₋₁₁₀₀	342 ± 1 (500 s)	42 ± 1 (500 s)
	698 ± 1 (1100 s)	56 ± 1 (1100 s)
<u>Tri-NAA-BPFs ($t_{pw} = 6$ min)</u>		
NAA-BPF ₇₀₀₋₉₀₀₋₁₁₀₀	439 ± 1 (700 s)	79 ± 1 (700 s)
	589 ± 1 (900 s)	43 ± 1 (900 s)
	722 ± 1 (1100 s)	68 ± 1 (1100 s)
<u>Tetra-NAA-BPFs ($t_{pw} = 6$ min)</u>		
NAA-BPF ₅₀₀₋₇₀₀₋₉₀₀₋₁₁₀₀	331 ± 1 (500 s)	88 ± 1 (500 s)
	447 ± 1 (700 s)	64 ± 1 (700 s)
	583 ± 1 (900 s)	47 ± 1 (900 s)
	741 ± 1 (1100 s)	99 ± 1 (1100 s)
<u>Multi-NAA-BPFs ($t_{pw} = 6$ min)</u>		
NAA-BPF _{3-Layer}	448 ± 1 (700-750 s)	111 ± 1 (700-750 s)
NAA-BPF _{5-Layer}	485 ± 1 (700-800 s)	151 ± 1 (700-800 s)
NAA-BPF _{8-Layer}	489 ± 1 (700-875 s)	192 ± 1 (700-875 s)
NAA-BPF _{10-Layer}	503 ± 3 (700-925 s)	325 ± 2 (700-925 s)