Supporting Information for

"Quantitative SERS by Hot Spot Normalization – Surface Enhanced Rayleigh Band Intensity as an Alternative Evaluation Parameter for SERS Substrate Performance"

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Table S1 $I_{Raman}/I_{Rayleigh}$ acquired using different Raman instruments

Instrument #	$\mathbf{I_{1076}/I_{Rayleigh\text{-}max}}$[1]	$\mathbf{I_{1076}/I_{Rayleigh\text{-}126}}$[2]
1	1.70	1.70
2	0.97	1.62

[1] $I_{Rayleigh\text{-}max}$ reflects the maximum intensity of the pseudo-Rayleigh band; [2] $I_{Rayleigh\text{-}126}$ reflects the intensity of the Rayleigh band at 126 cm^{-1}.

Table S2 $I_{Rayleigh}$ acquired using different Raman instruments

Instrument #	$\mathbf{I_{Rayleigh\text{-}2}}$[1] **(CCD cts)**	$\mathbf{I_{Rayleigh\text{-}2}/I_{Rayleigh\text{-}1}}$[2]
1	393	2.20
2	319	2.29

[1] $I_{Rayleigh\text{-}1}$ is the pseudo-Rayleigh band intensity for substrate #1; [2] $I_{Rayleigh\text{-}1}/I_{Rayleigh\text{-}2}$ is the ratio between the pseudo-Rayleigh band intensities of substrate #2 and substrate #1.

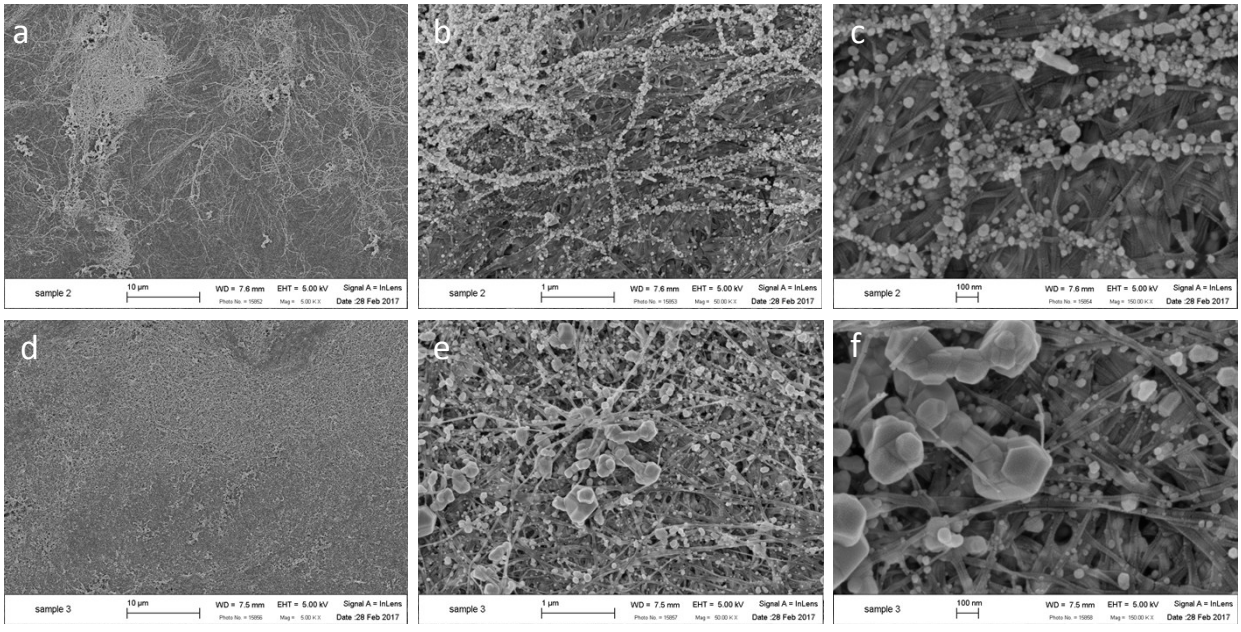

Figure S1. SEM images of the AuNP/BC-12 substrate with 5000 (a), 50000 (b), and 150000 (c) magnifications; SEM images of the AgNP/BC-25 substrate with 5000 (a), 50000 (b), and 150000 (c).

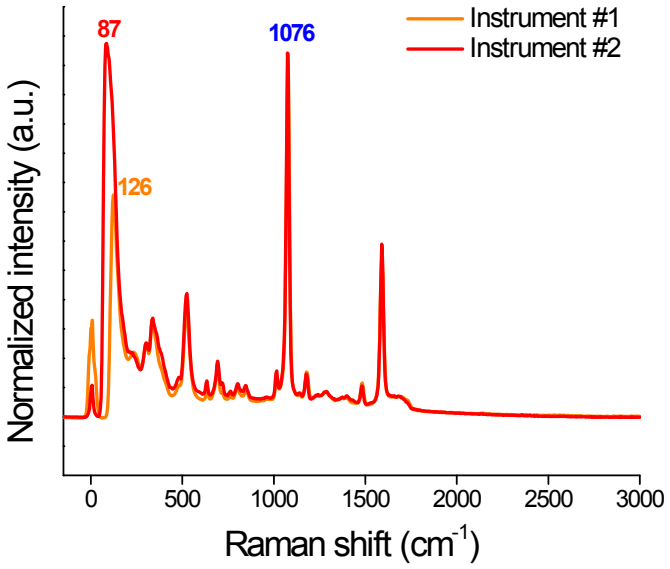

Figure S2. SERS spectra of 4-MBA on AuNP/BC-1.2 collected using the Raman instrument in our lab with an alternative edge filter and another Raman instrument in another lab. The spectra were normalized to the Raman intensity at 1076 cm^{-1}.

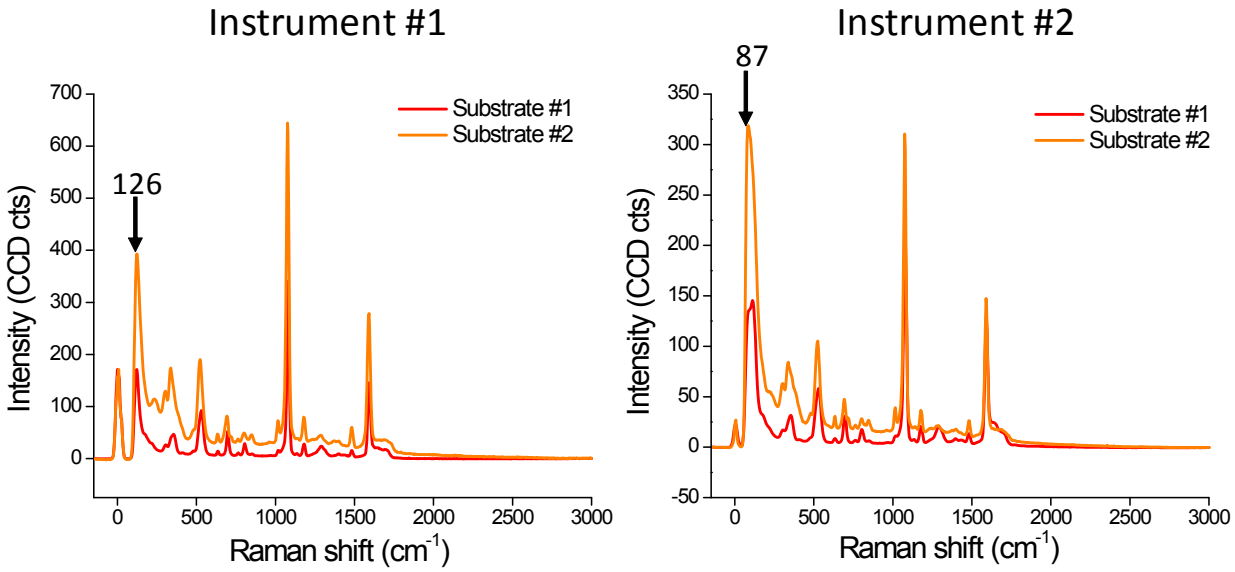

Figure S3. SERS spectra of 4-MBA on AuNP/BC-1.2 and A-AuNPs collected using the Raman instrument in our lab with an alternative edge filter and another Raman instrument in another lab.

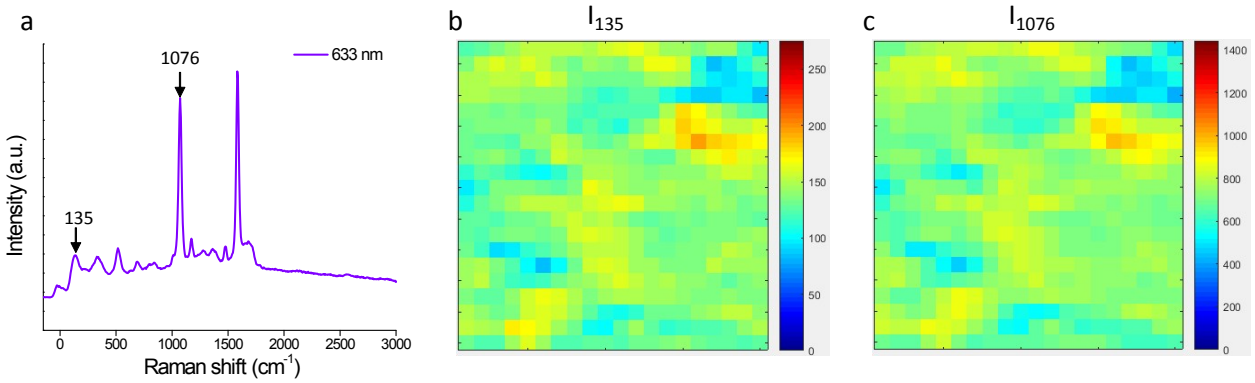

Figure S4. a) SERS spectrum of 4-MBA on AuNP/BC-1.2 collected using 633 nm laser; SERS maps tracking b) the Rayleigh band at 135 cm^{-1} and c) the Raman band at 1076 cm^{-1}.