**Supplementary Information**

* Example\_Processing\_Algorythm\_ShareNn.docx – Markdown File of R-script for deconvolving Raman Data (A word document version of the R file)
* R-Script for deconvolving Raman Data – Example\_Processing\_Algorythm\_ShareN.R

**Reference SERS data**

From Alabi et al.

* Humic Acid – peatextract.dat
* Asphaltene – siljianaspah.dat

From Bowden et al.

* ββ-carotene – bbcar.txt
* *c*-phycocyanin – phycox2.dat

Used to construct the third component:

* “pigments” – tetrapyrolemodel3.txt

Also include is a SERS spectra for Scytonemin

* Scytonemin – Scy.txt

**SERS data used in MS for samples from Brough**

* Flagstone Shingle samples – SP\_28.txt & SP29.txt
* Sandstone Gravel samples – SP\_36.txt & SP\_37.txt