

Supplementary Material

Eumelanin Graphene-Like Integration: The Impact on Physical Properties and Electrical Conductivity

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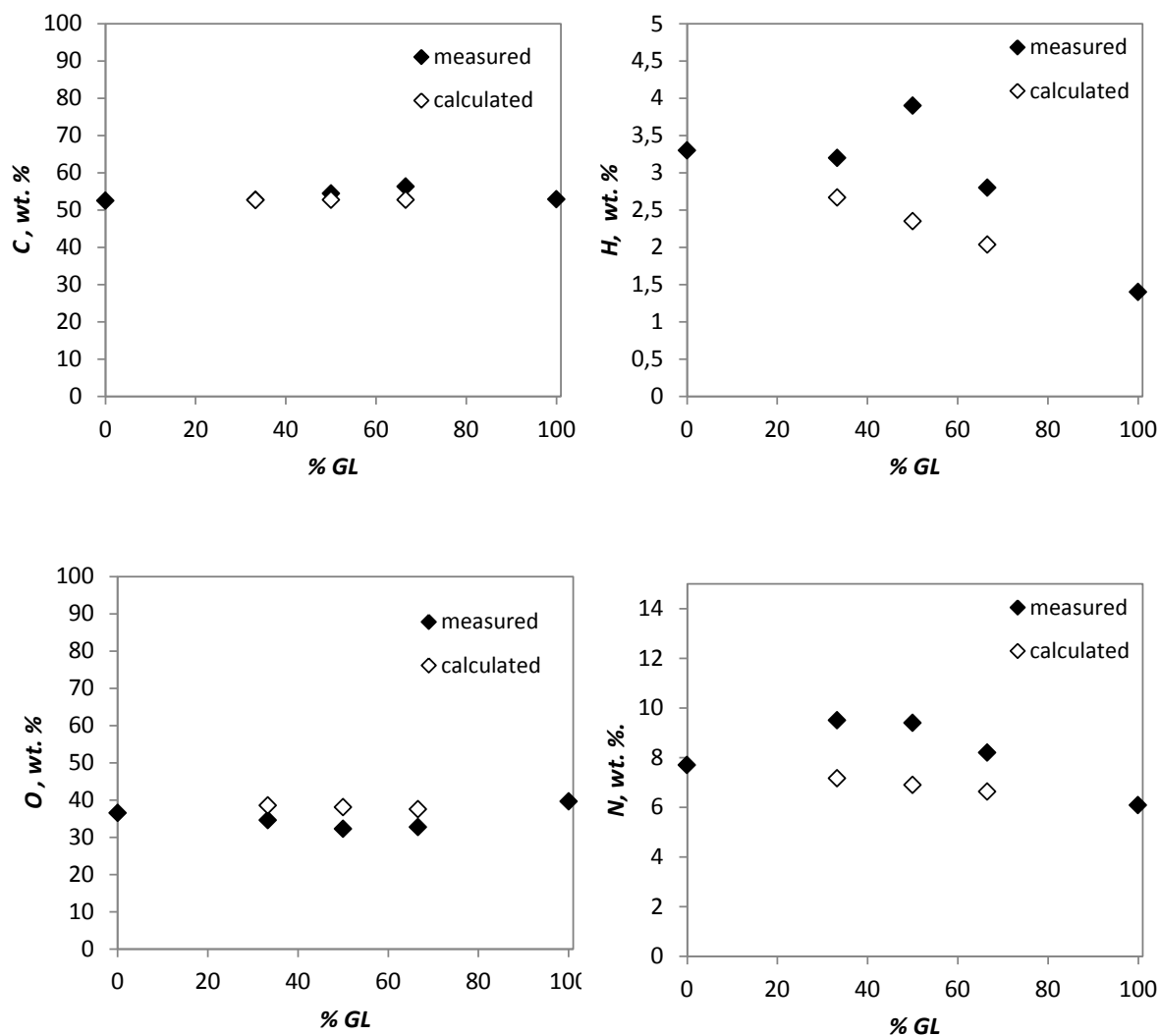


Figure S1. Comparison between theoretical and measured C, H, N and O contents.

The “theoretical” percentages value of each element content was calculated according with the following equation:

$$X_{\text{tot}} = X_{\text{GL}} \times f_{\text{GL}} + X_{\text{EU}} \times f_{\text{EU}}$$

where X_{tot} ($X = \text{C}, \text{O}, \text{H}$ or N) is the element percentage in the composite (expressed as wt. %), X_{GL} and X_{EU} are the percentage (wt. %) of the same element in GL and EU respectively, and f_{GL} and f_{EU} are the weight fractions of GL and EU in the composite ($f_{\text{GL}} = 1 - f_{\text{EU}}$).

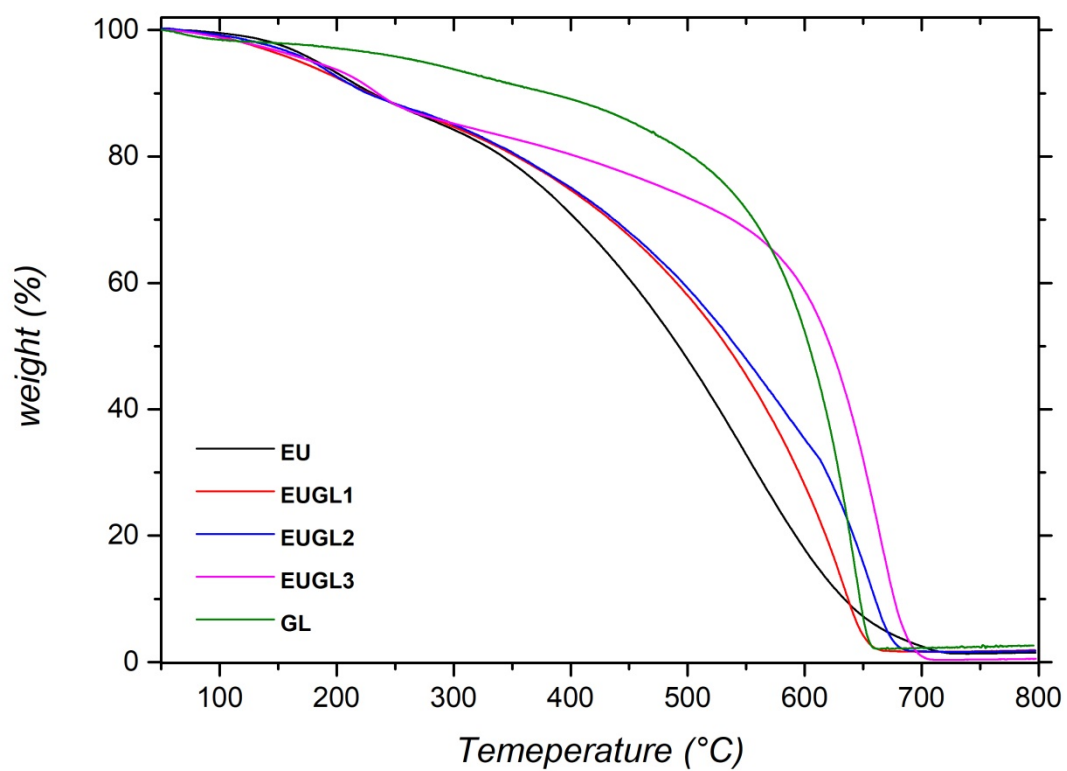
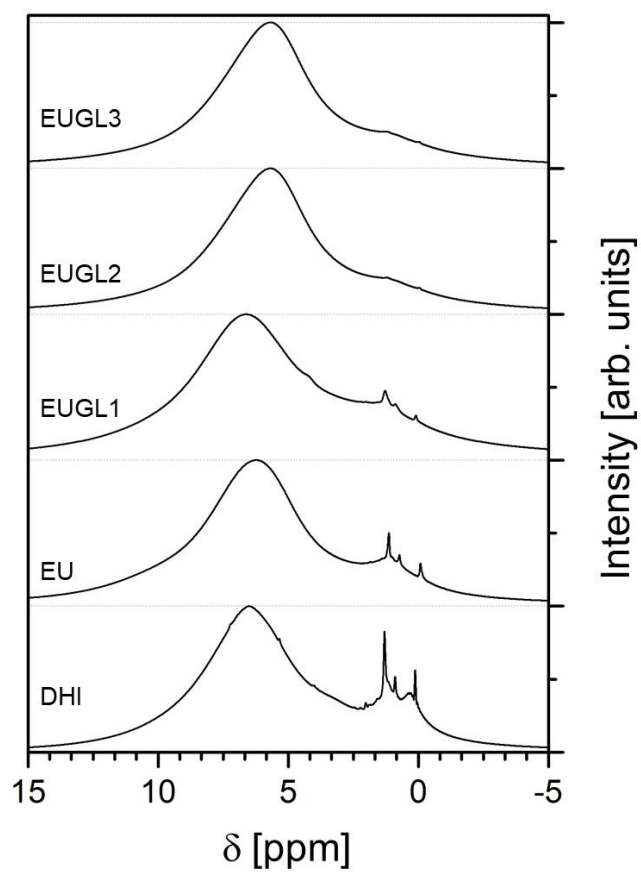


Figure S2. Thermogravimetric profiles of the EU, GL and the three hybrid materials.

Figure S3. ^1H MAS NMR spectra

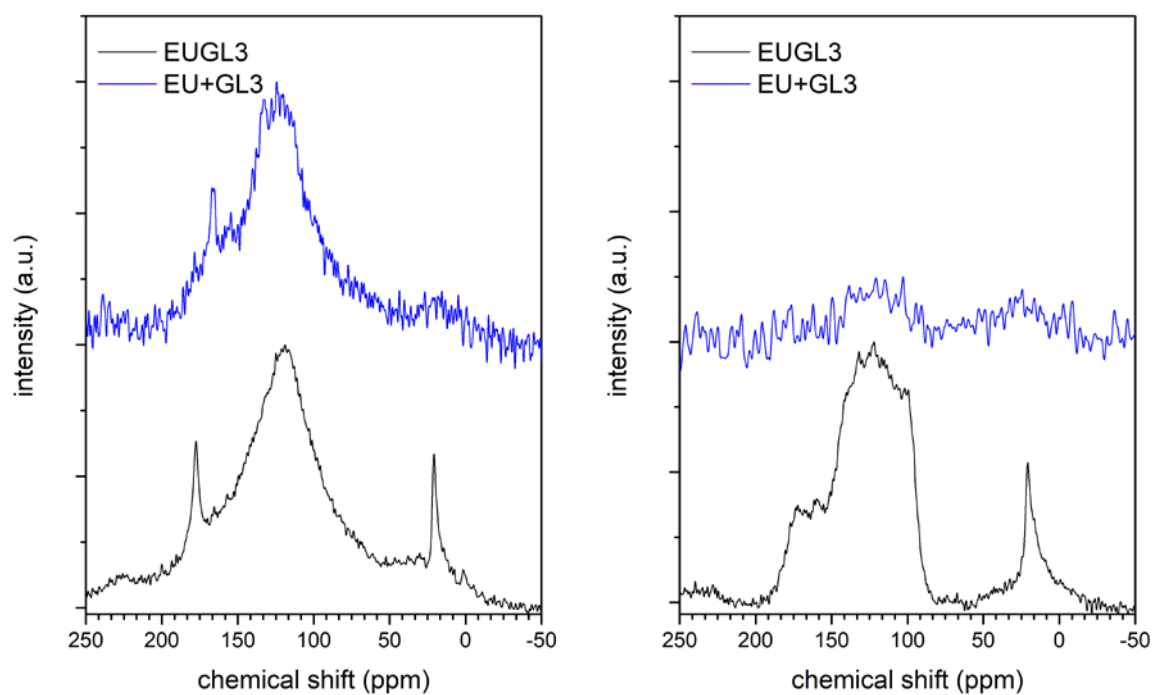


Figure S4. Left panel: comparison between ^{13}C MAS NMR spectra of EUGL3 and the physical mixture EU+GL3; right panel: ^1H - ^{13}C CPMAS NMR spectra of EUGL3 and the physical mixture EU+GL3

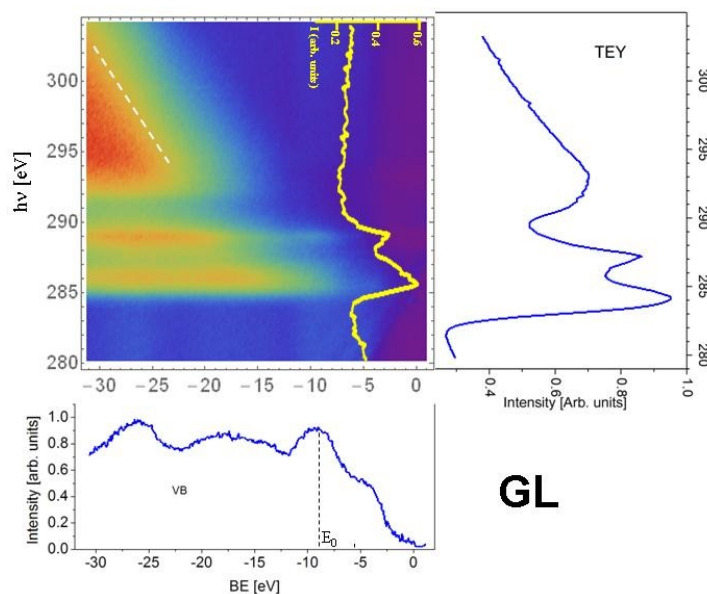


Figure S5. ResPES maps recorded on GL reported together with the extracted valence band (below the map), XAS spectrum (on the right), and a CIS profile vs. photon energy at a given energy E₀ corresponding to a marked feature in the valence band profile (yellow curve).