

Electronic Supplementary Material

Amine-rich carbon nitride nanoparticles: Synthesis, covalent functionalization with proteins and application in a fluorescence quenching assay

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Tables

Table S1 Materials synthesized by changing progressively the U:Lys molar ratio (from 1:1 to 12:1) and heating time (2 and 16 hours).

Urea : Lysine molar ratio	Synthesis time (hours)	Soluble fraction ^a (mg mL ⁻¹)	pH of CNNPs dissolved in water ^b
1	2	14.3	9
3	2	16.3	9
6	2	29.6	9
12	2	28.6	9
1	16	7.2	9
3	16	nd	9
6	16	7.6	11
12	16	7.8	10

^a solid CNNPs were dissolved in 50 ml of water and filtered through a 0.45 μm membrane. The dissolved fraction was measured as the amount of CNNPs remained in solution after filtering.

^b pH of the filtered CNNPs water solution was estimated with litmus paper.

Figures

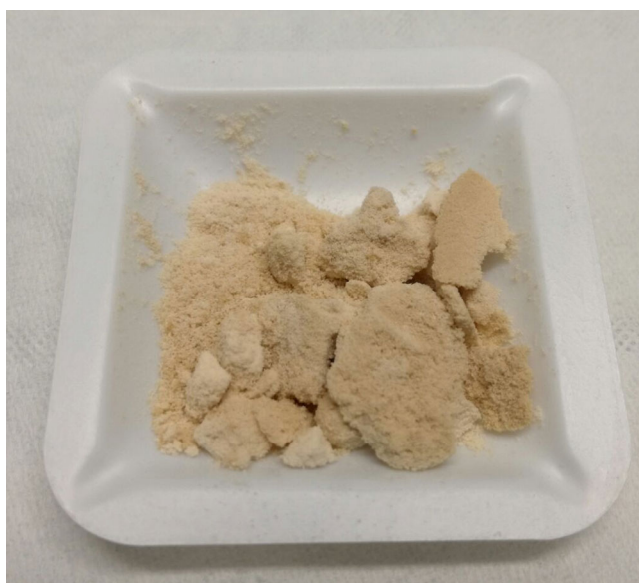


Figure S1 Pure lysine after the thermal treatment (2 hours at 200 °C).

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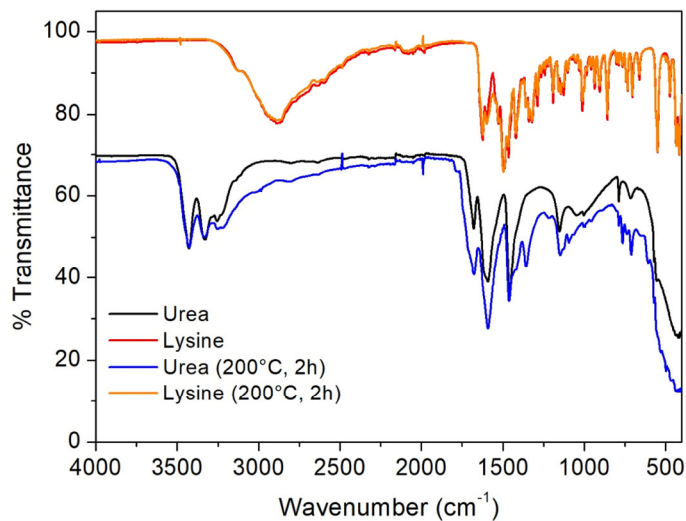


Figure S2 Comparison between the ATR/FTIR spectra of pure urea and pure lysine before and after the thermal treatment (2 h at 200 °C).

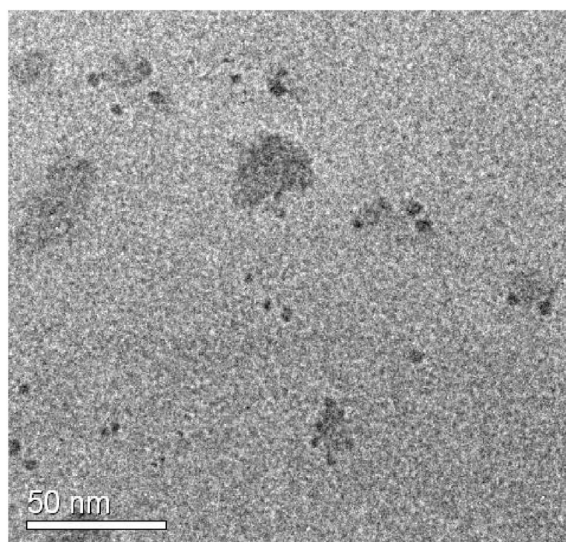


Figure S3 HRTEM micrographies of CNNP^{Lys} obtained after 2 hours of heating time. The average particle size is in the 2-5 nm range.

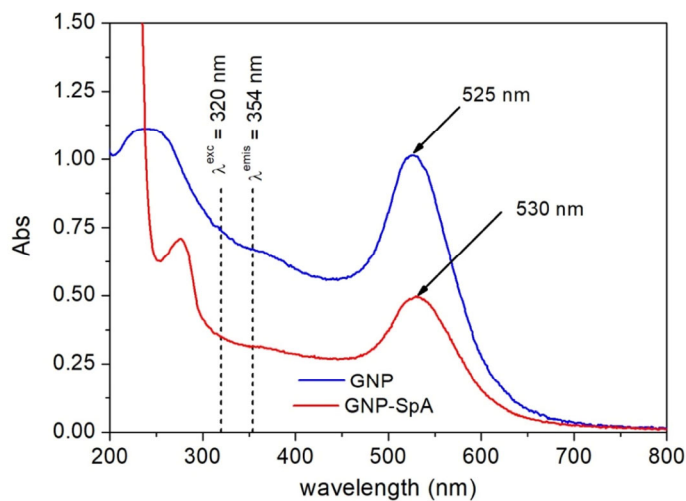


Figure S4 UV-Vis spectrum of the quencher GNPs as prepared (blue line) and conjugated with SpA (GNP-SpA, red line). The wavelengths reported represent the maximum excitation and emission of CNNP^{Lys}, while the black arrows highlight the maximum SPR signal of the gold nanoparticles.