

Supplementary Material

Reductive Amination Reaction for the Functionalization of Cellulose Nanocrystals

Omar Hassan Omar ¹, Rosa Giannelli ², Erica Colaprico, ² Laura Capodiecici, ³ Francesco Babudri, ² and Alessandra Operamolla ^{4,*}

¹ CNR-ICCOM Istituto di Chimica dei Composti Organometallici, Via Edoardo Orabona 4, 70126 Bari, Italy; hassan@ba.iccom.cnr.it

² Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Via Edoardo Orabona 4, 70126 Bari, Italy; francesco.babudri@uniba.it

³ ENEA – Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Laboratory for Functional Materials and Technologies for Sustainable Applications (SSPT-PROMAS-MATAS), S.S. 7 “Appia” km 706, I-72100 Brindisi (Br), Italy; laura.capodiecici@enea.it

⁴ Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Via Giuseppe Moruzzi 13, 56124 Pisa, Italy

* Correspondence: alessandra.operamolla@unipi.it; Tel.: 0039 050 2219342.

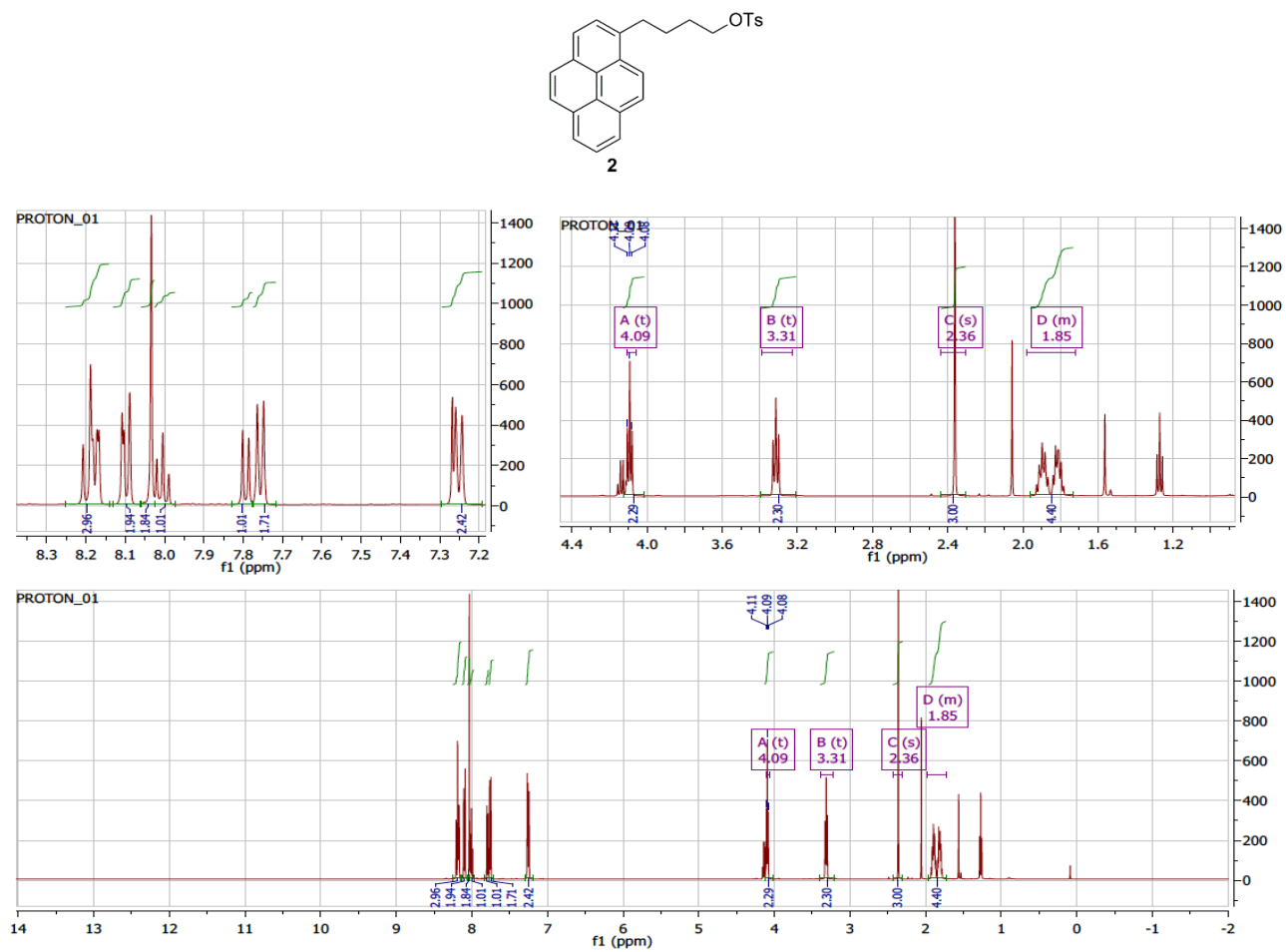


Figure S1. ¹H-NMR spectrum of 4-(1-pyrenyl)butyl tosylate **2** in CDCl₃.

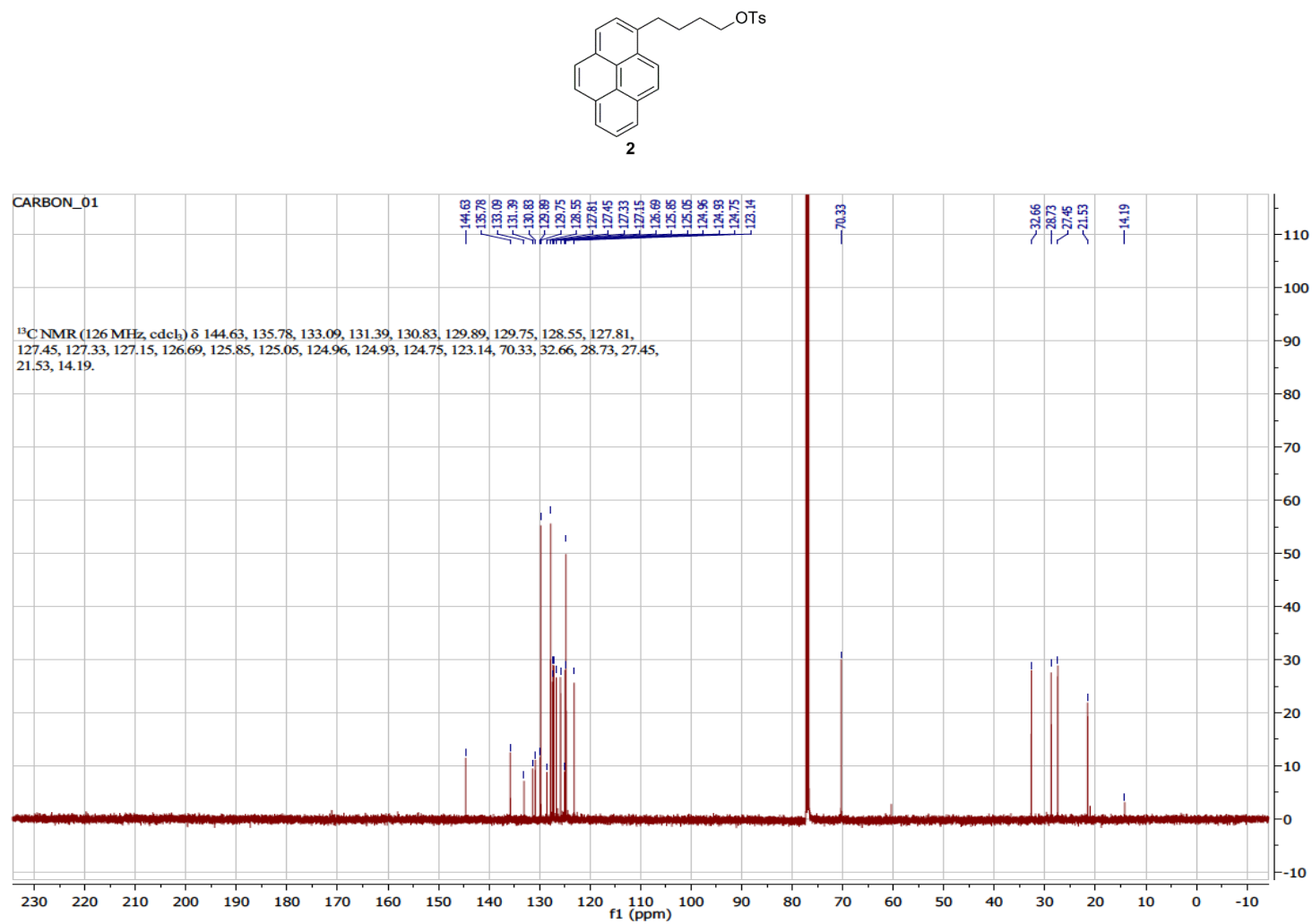


Figure S2. ^{13}C -NMR spectrum of 4-(1-pyrenyl)butyl tosylate **2** in CDCl_3 .

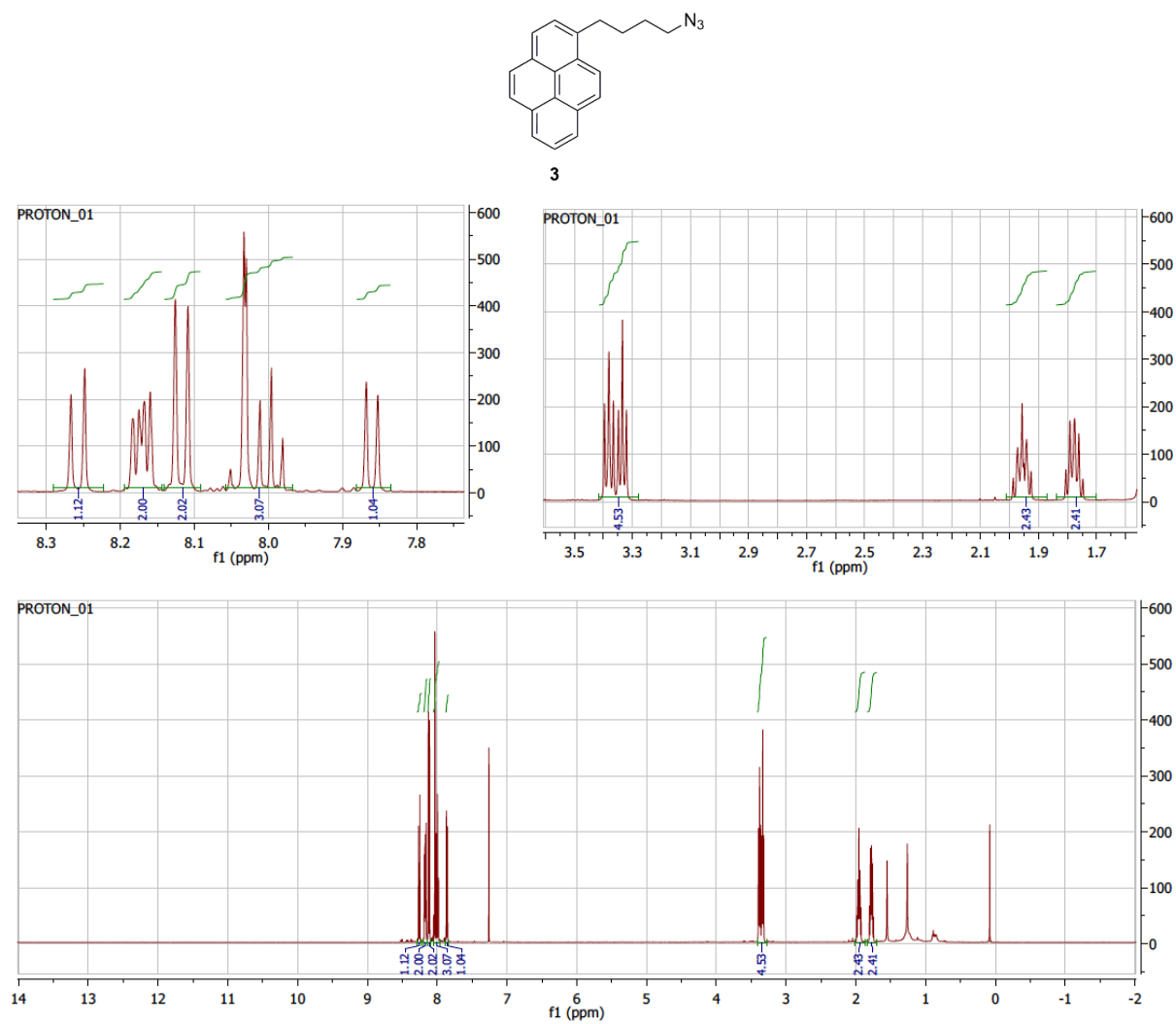


Figure S3. ^1H -NMR spectrum of 1-(4-azidobutyl)pyrene **3** in CDCl_3 .

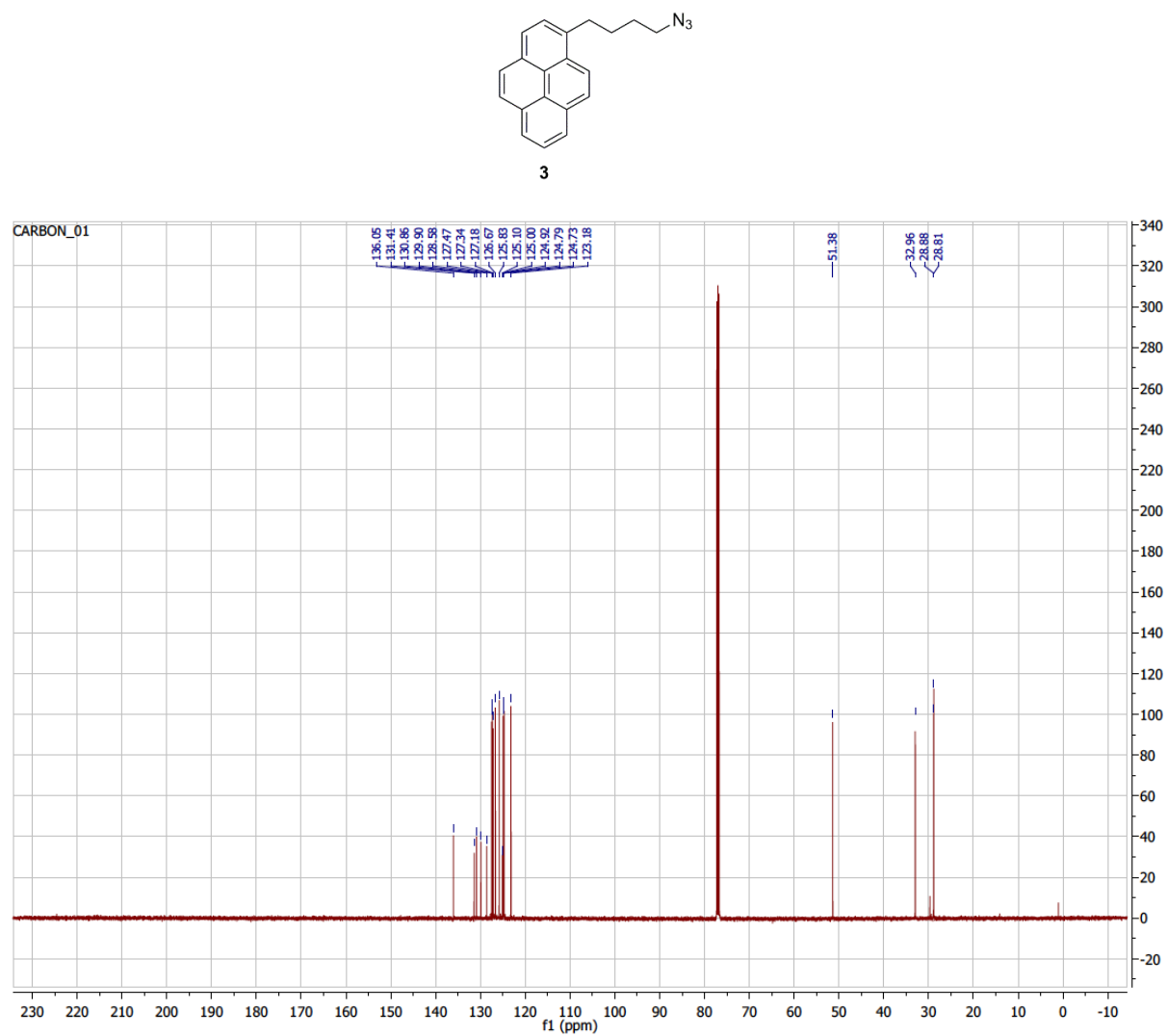


Figure S4. ^{13}C -NMR spectrum of 1-(4-azidobutyl)pyrene **3** in CDCl_3 .

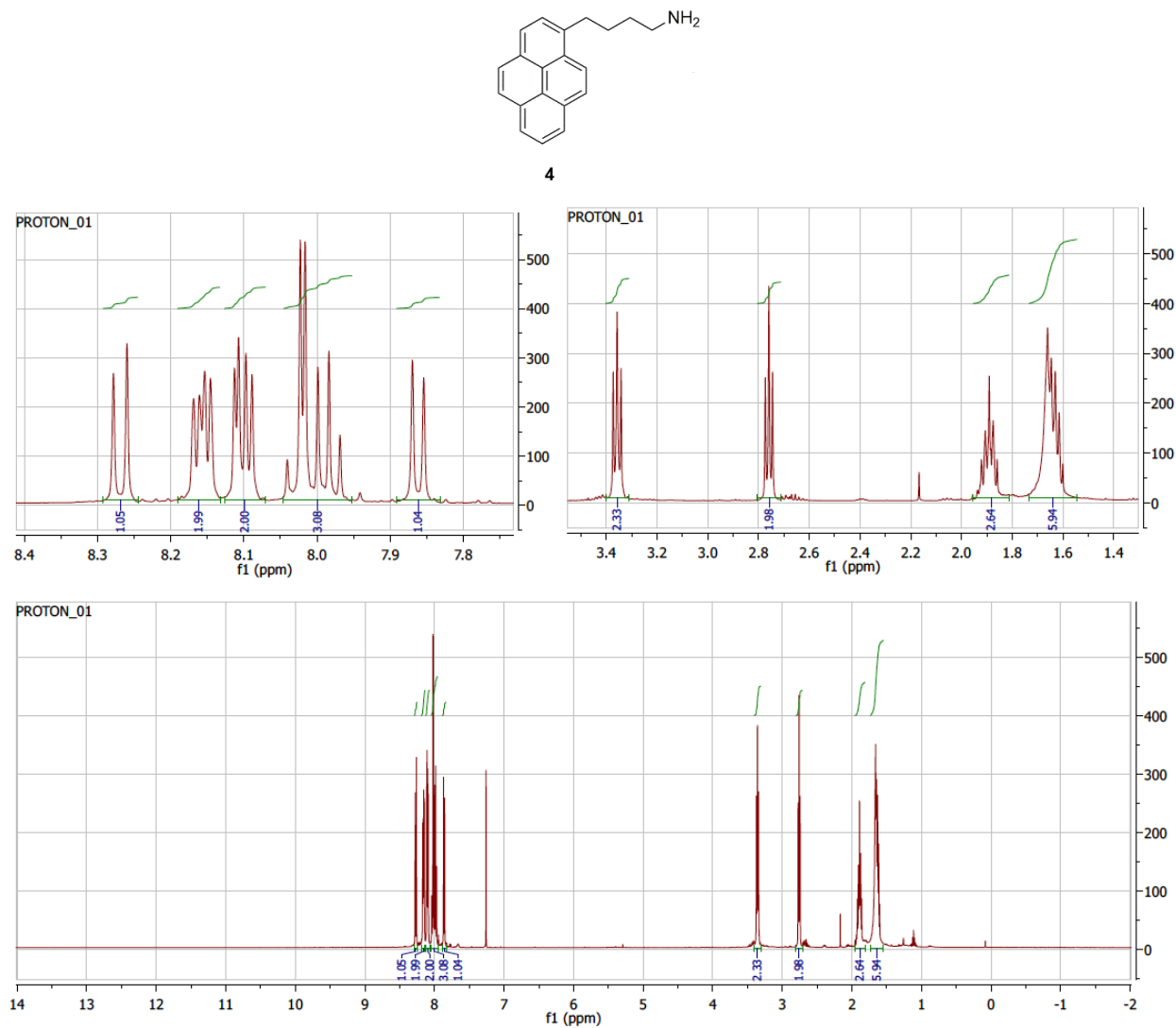


Figure S5. ^1H -NMR spectrum of 4-(1-pyrenyl)butanamine **4** in CDCl_3 .

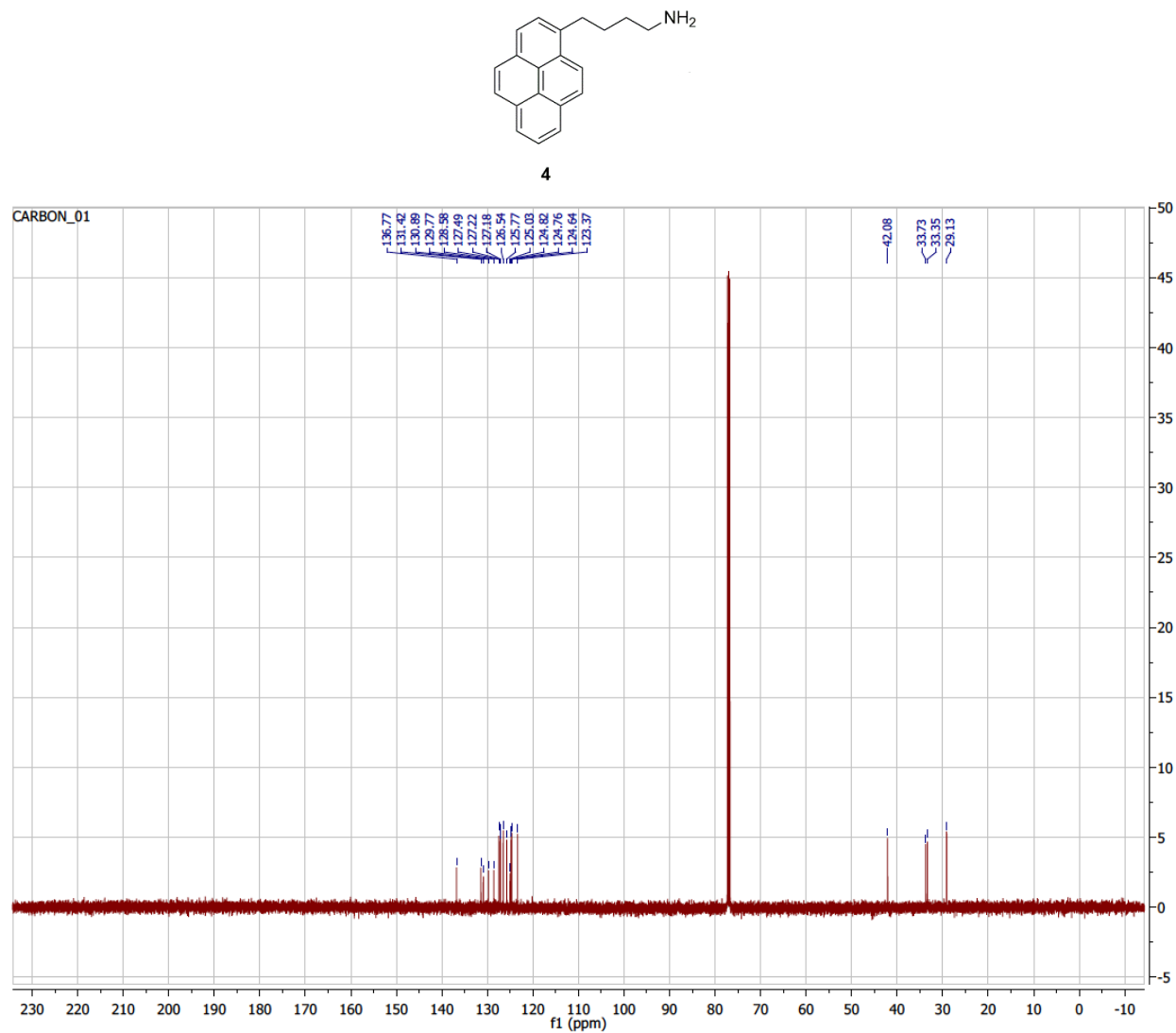


Figure S6. ^{13}C -NMR spectrum of 4-(1-pyrenyl)butanamine **4** in CDCl_3 .

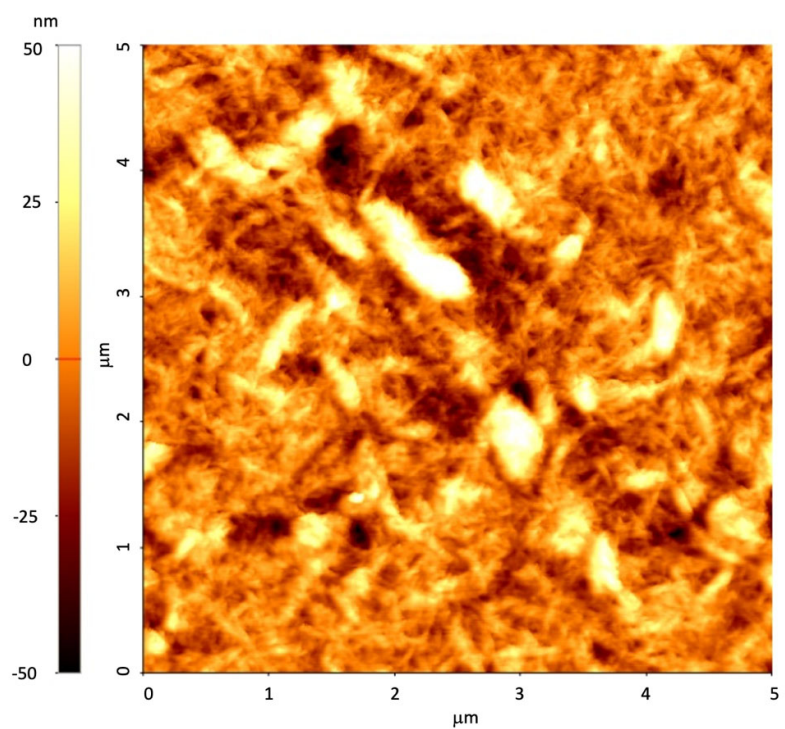


Figure S7. AFM 5x5 μm² topography recorded on a film of Pyrene modified S_CNC 7a deposited on quartz from water.

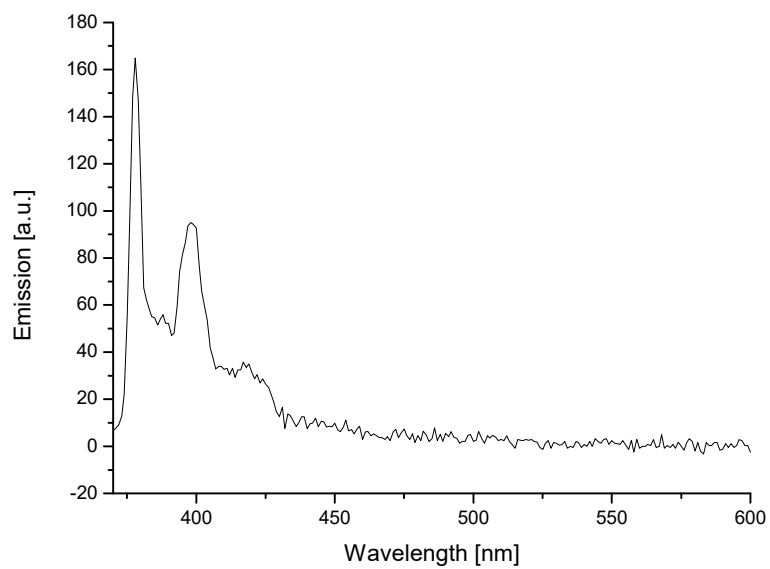


Figure S8. 4-(1-pyrenyl)butanamine 4 emission spectrum in water.

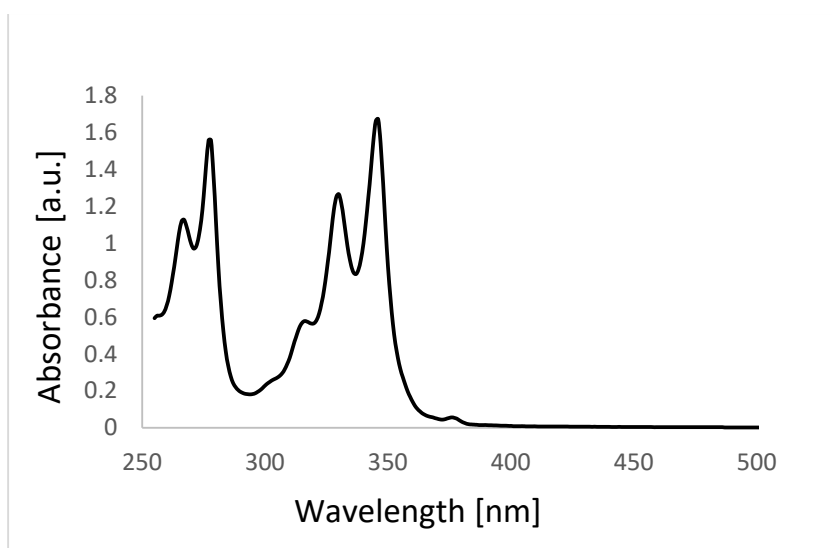


Figure S9. 4-(1-pyrenyl)butanamine **4** UV-vis absorption spectrum in DMSO.

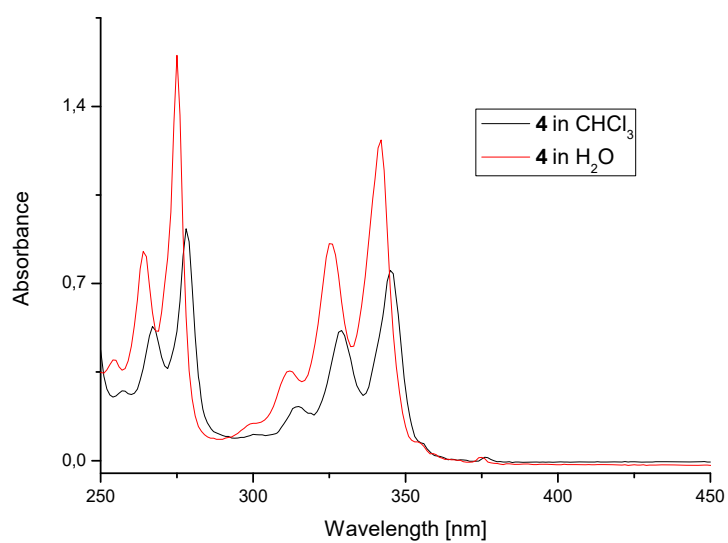


Figure S10. 4-(1-pyrenyl)butanamine **4** UV-vis absorption spectra in CHCl_3 and water.

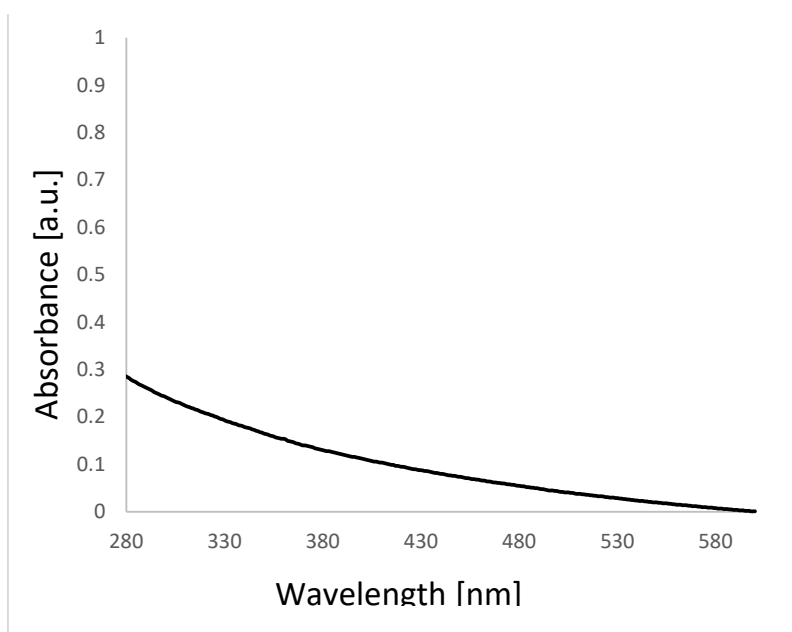


Figure S11. S_CNC UV-vis 5a absorption spectrum in DMSO.

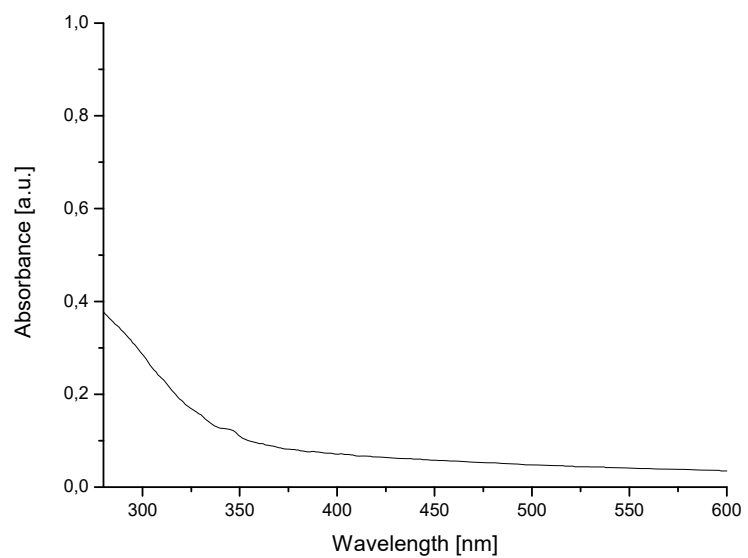


Figure S12. Pyrene modified S_CNC 7a UV-vis absorption spectrum in DMSO.