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Electronic Supplementary Information

Synthesis of green fluorescent carbon dots from carbon nano-onions and graphene

oxide

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Table S1 Advatanges and disadvantage of the different synthetic methods used for the preparation of CDs.

Synthetic method	Advantages	Disadvantages		
Chemical oxidation	Cost effective, easy, no special	Harsh conditions, multi-steps		
	equipment required, infinite	required, no control over sizes		
	sources of starting materials,			
	high yield			
Electrochemical oxidation	One-step, reproducible, control	Special equipment required		
	over size, high yield,			
Hydrothermal/solvothermal	Cost effective, eco-friendly, non-	Low yield, no control over sizes,		
treatments	toxic	special equipment required		
Microwave-assisted synthesis	Rapid and scalable, eco-friendly,	High cost		
	control over size			
Laser ablation	Rapid, control over size	High cost, no control over size,		
		special equipment required		



Fig. S1 CNO-CDs purified through precipitation from acetone: **A)** acetone mixed with the sample; **B)** precipitation of CNO-CDs; **C)** dark precipitate obtained after the removal of the supernatant; **D)** salts removed from the precipitate, left in the supernatant; **E)** dry precipitate obtained.



Fig. S2 Deconvolution of the fluorescence spectra of CNO-CDs (**A-B**) and GO-CDs (**C-D**) obtained by using an excitation wavelength of 330 nm and 430 nm. (**A-B**) Excitation independent peak: λ_{em} 520 nm/2.38 eV; excitation dependent peaks λ_{em} 437 nm/2.84 eV and λ_{em} 605 nm/2.05 eV, respectively. (**C-D**) Excitation dependent peaks: λ_{em} 525 nm/2.36 eV, λ_{em} 443 nm/2.80 eV, λ_{em} 413 nm/3.00 eV and λ_{em} 510 nm/2.43 eV, λ_{em} 553 nm/2.24eV, λ_{em} 457 nm/2.71 eV, respectively.

CDs	Height (nm)	Average (nm)	Width (nm)	Average (nm)
	• 6.9		• 70	
CNO-CDs GO-CDs	• 4.4	6.4 ± 1.8	• 46	60 ± 12.5
	• 7.9		• 64	
	• 3		• 82	
	• 2.8	3 ± 0.2	• 74	77.3 ± 4.2
	• 3.2		• 76	
	• 18.1		• 106	
AP-CNO-CDs	• 15.6	14.2 ± 4.8	• 100	93.7 ± 16.4
	• 8.9		• 75	

Table S2 Height and width values of the synthesized CDs from AFM analyses.



Fig. S3 Fluorescence photostability analyses of AP-CNO-CDs.