Evaluation of Different Bottom-up Routes for the Fabrication of Carbon Dots

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Table S1. Inputs required for the production of 1 Kg of CDs.

Carbon dots	Carbon source (Kg)	Nitrogen source (Kg)	Deionized Water (Kg)	Electricity (KWh)
Hydrothermal	50	16	330	17
Microwave	2.4	0.8	20	12
Calcination	3	1	-	17

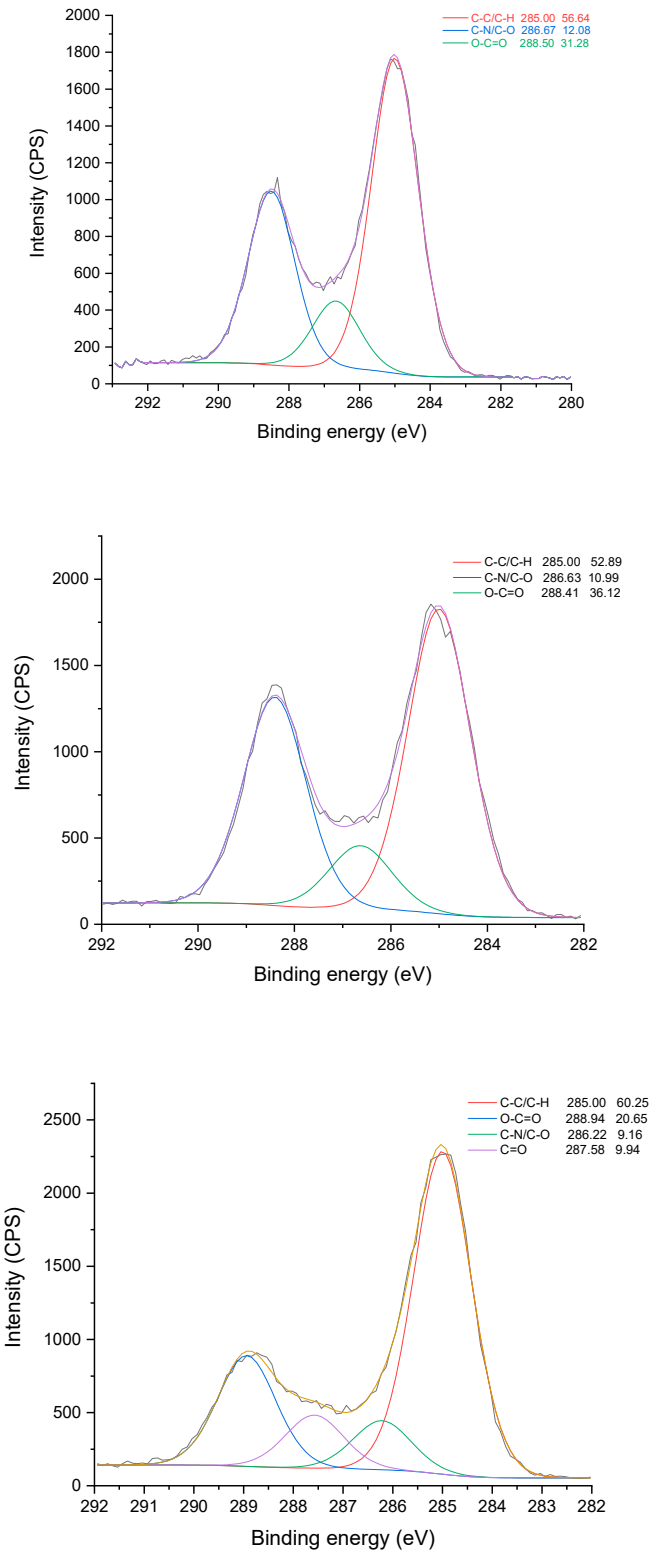


Figure S1. XPS C 1*s* spectra for calcinated- (top), microwave- (middle) and hydrothermal-based (bottom) CDs.

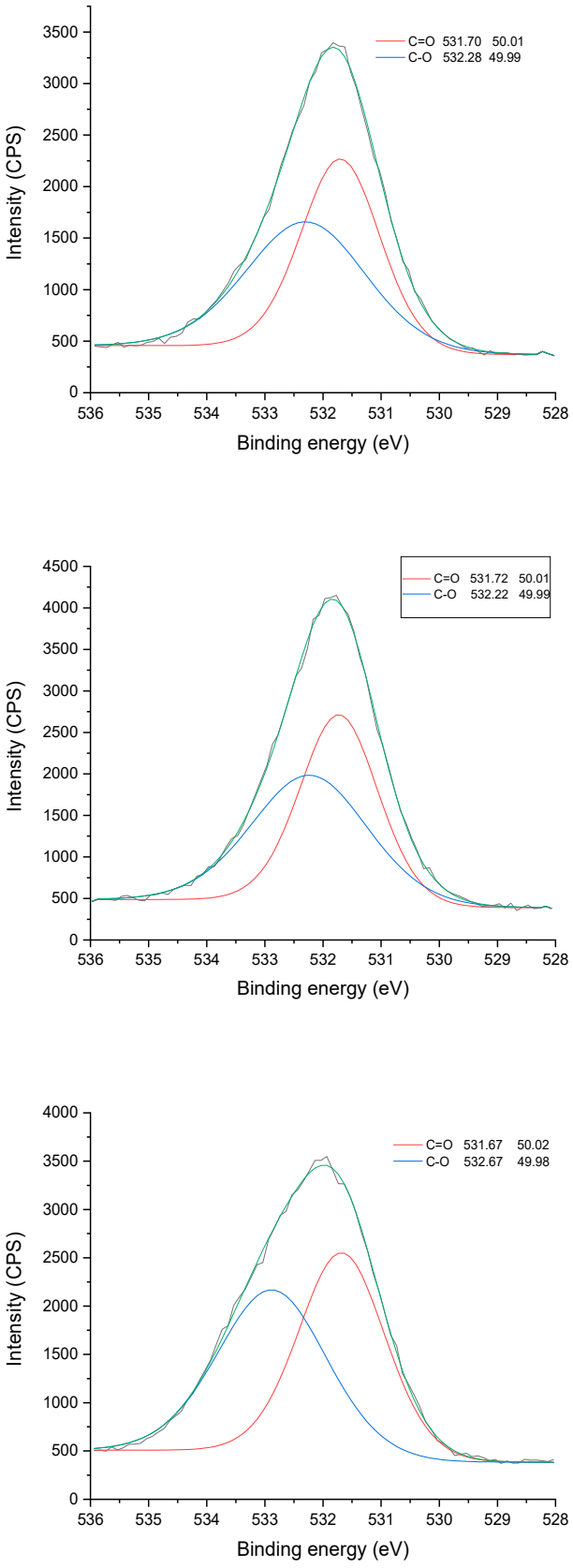


Figure S2. XPS O 1*s* spectra for calcinated- (top), microwave- (middle) and hydrothermal-based (bottom) CDs.

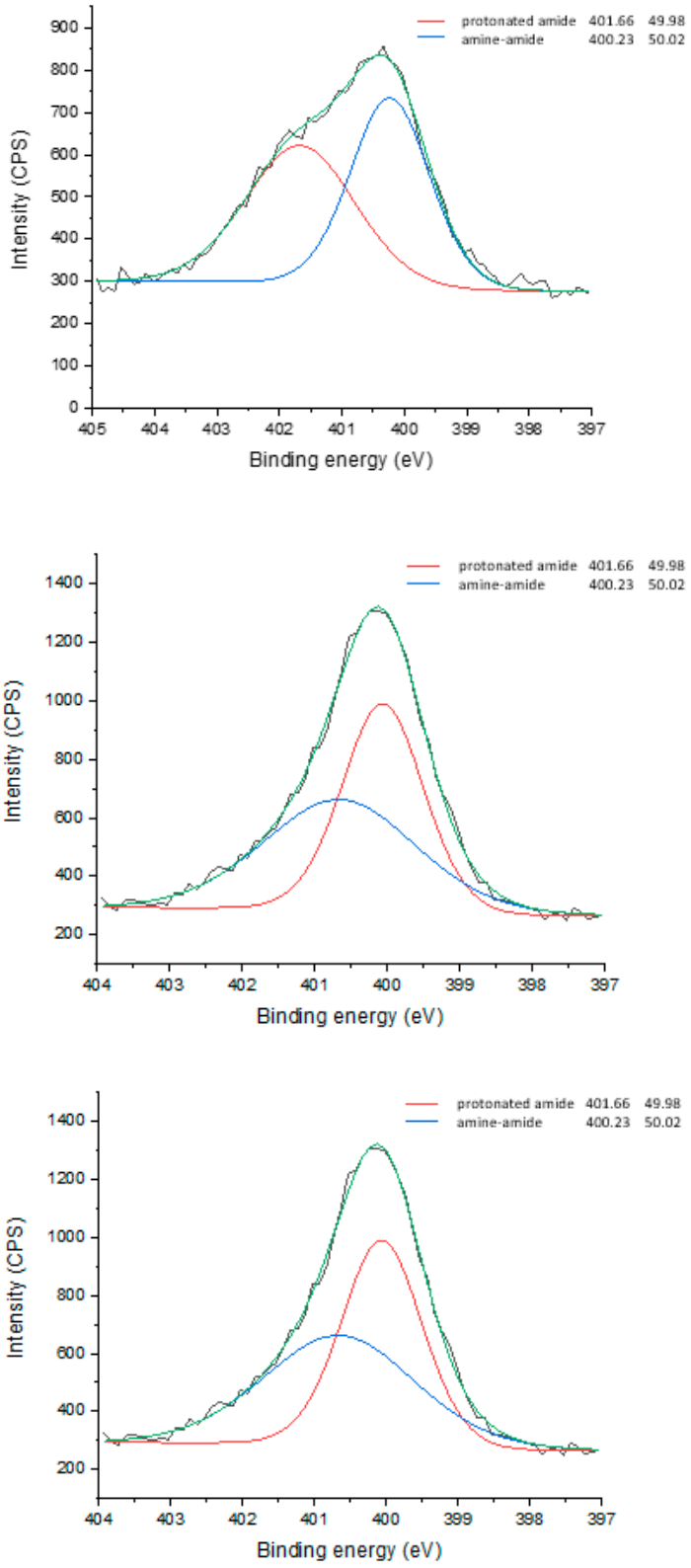


Figure S3. XPS N 1*s* spectra for calcinated- (top), microwave- (middle) and hydrothermal-based (bottom) CDs.

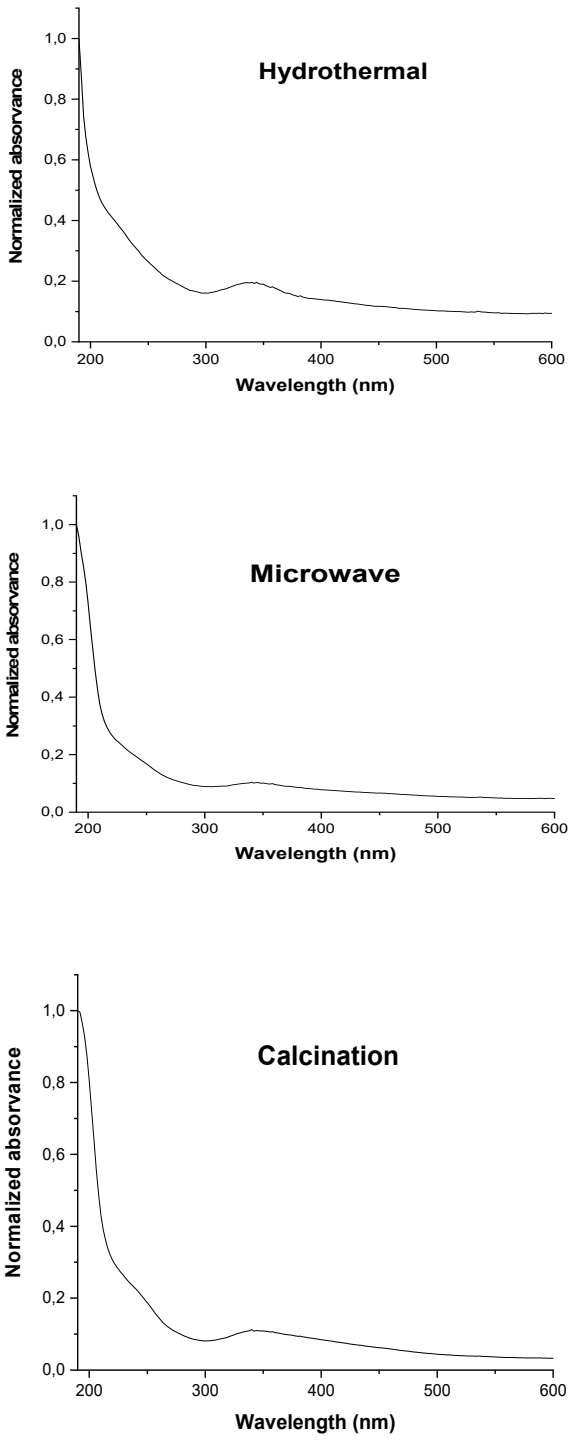
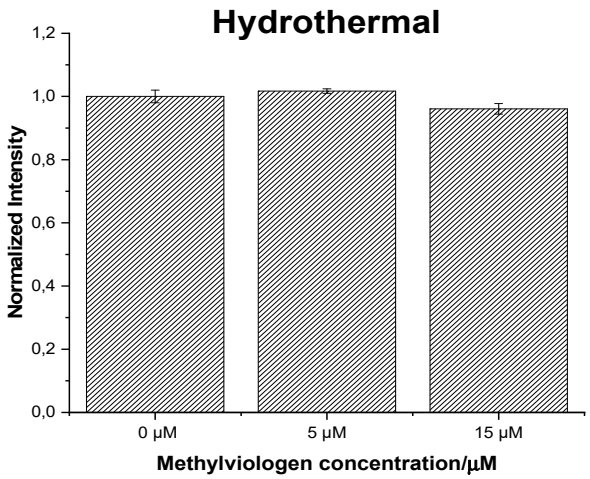
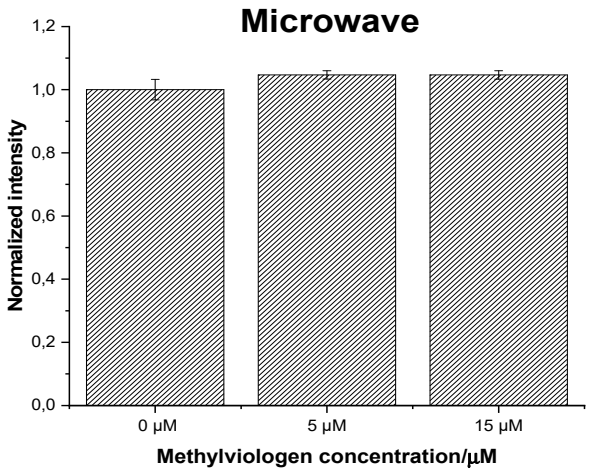


Figure S4. UV-Vis spectra of the three synthesized CDs.





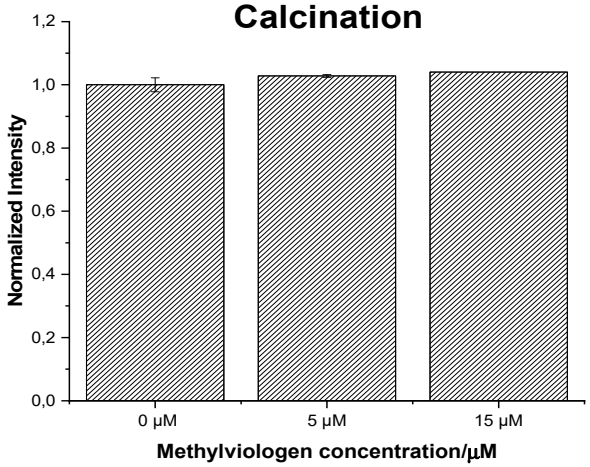


Figure S5. Normalized intensity of different CDs in the present of different concentrations of methyl viologen.

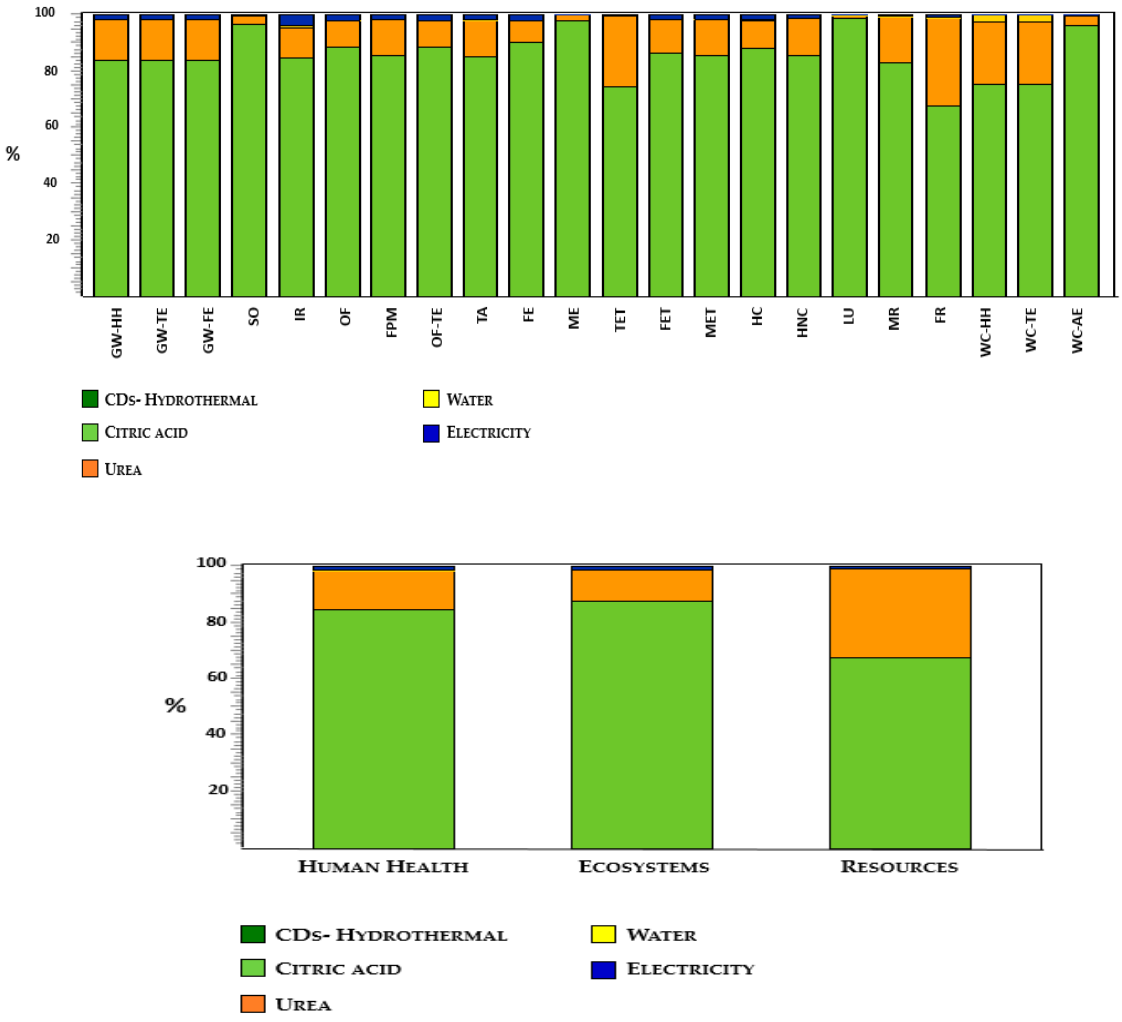
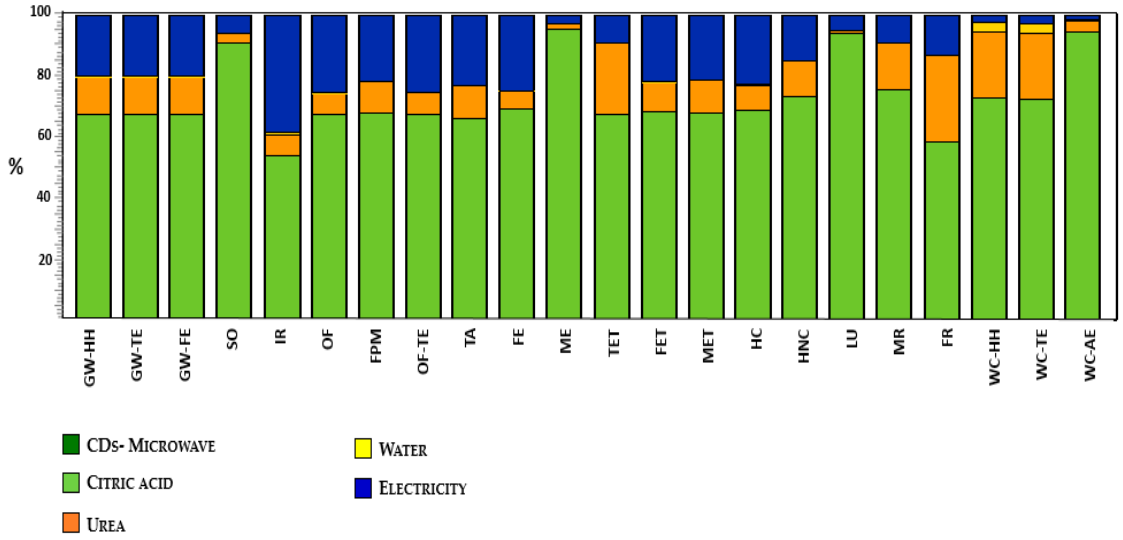


Figure S6. (I) Relative environmental impacts and **(II)** comparative damage assessment for hydrothermal synthesis.



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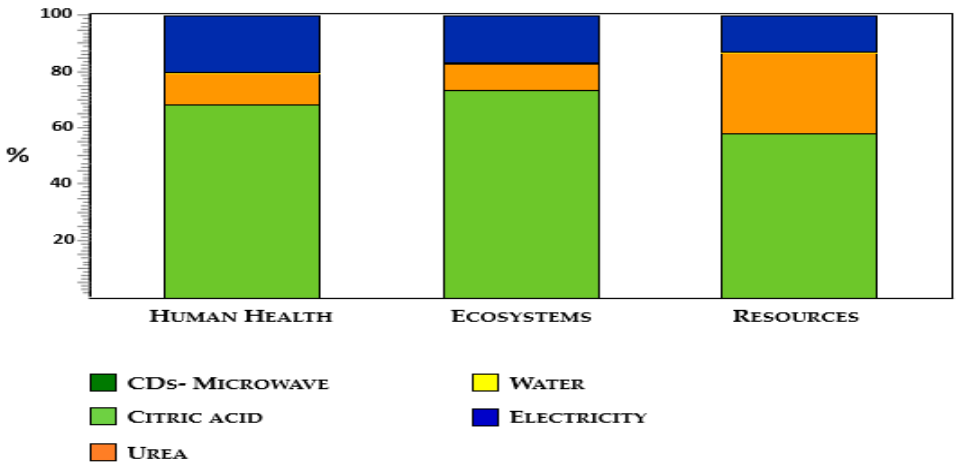

II

Figure S7. (I) Relative environmental impacts and **(II)** comparative damage assessment for microwave synthesis.

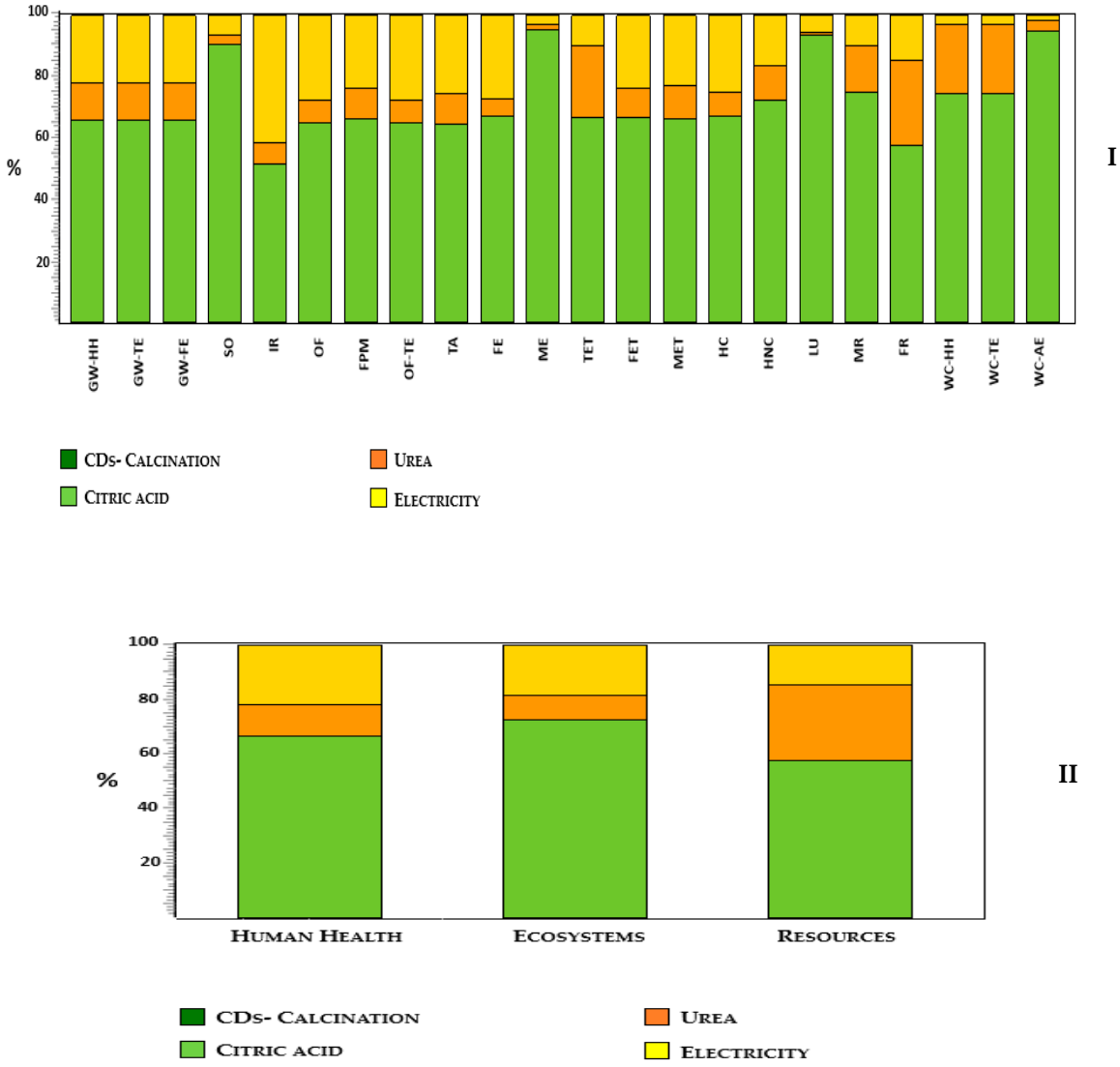

Figure S8. (I) Relative environmental impacts and **(II)** comparative damage assessment for calcination synthesis.

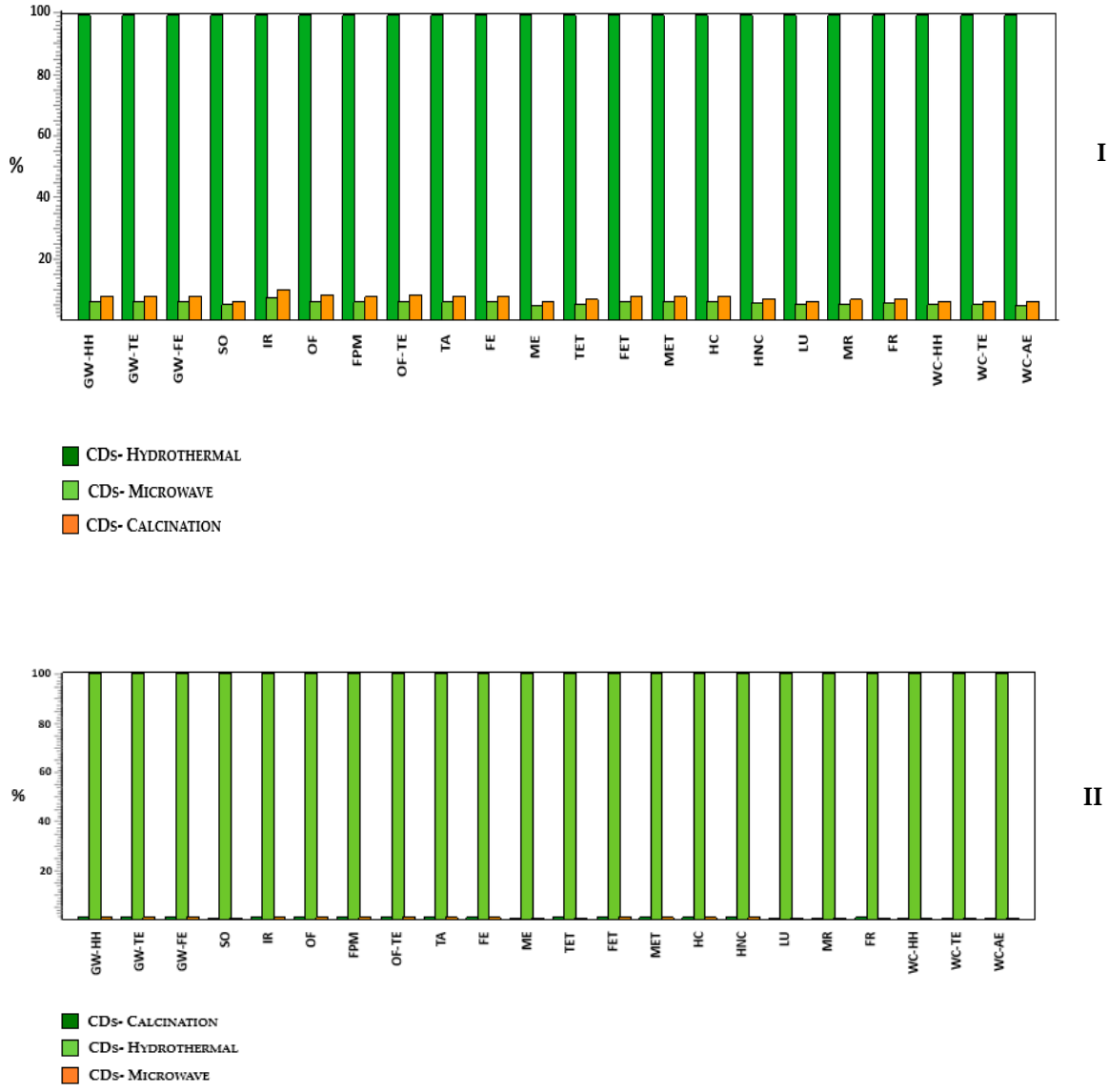

Figura S9. Relative environmental impacts for all synthesis using **(I)** weigth unit and **(II)** QY unit.

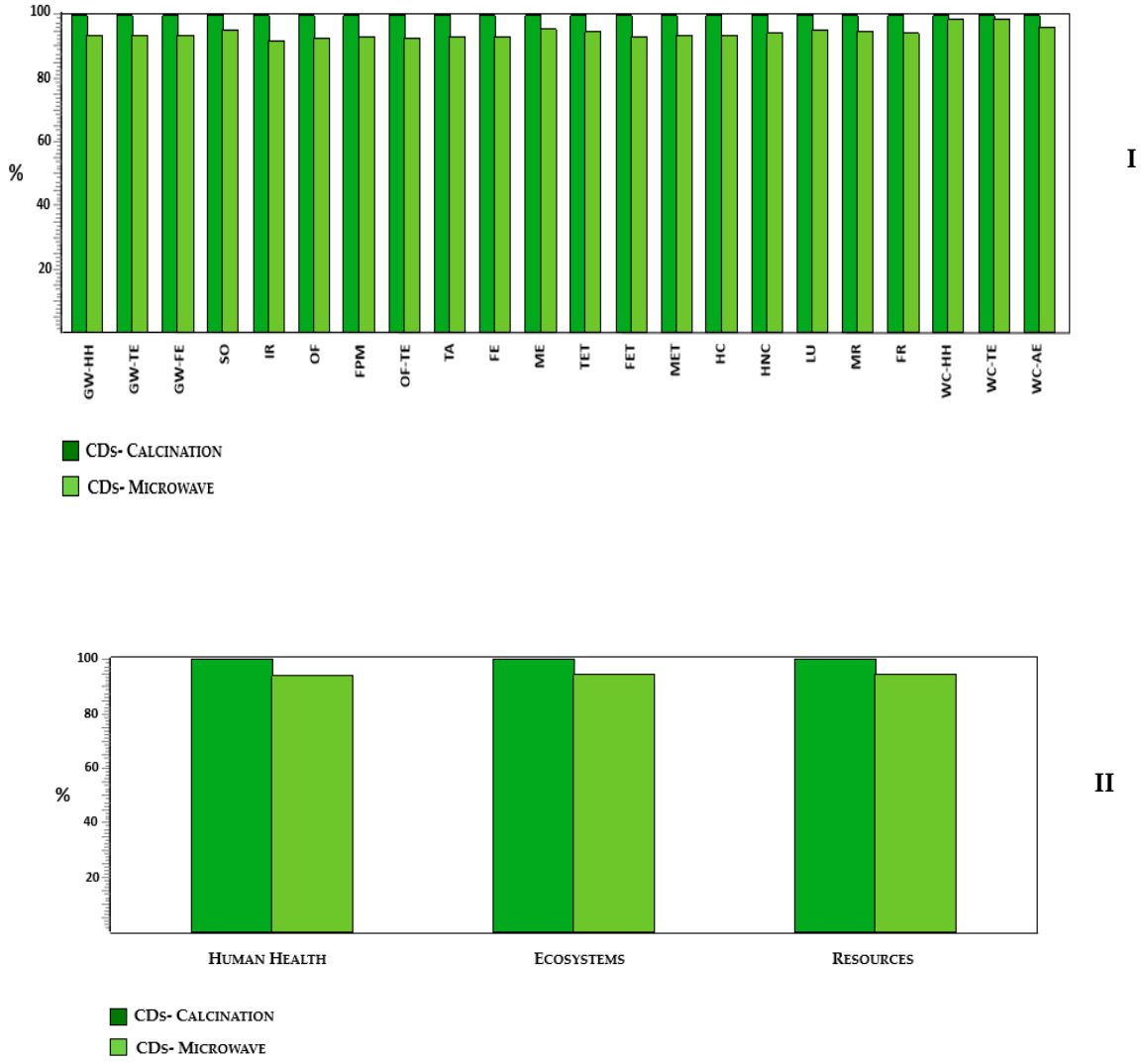

Figure S10. (I) Relative environmental impacts and **(II)** comparative damage assessment for Microwave- and Calcination synthesis using QY unit.