

## SUPPORTING INFORMATION

# Turning Spent Coffee Grounds into Sustainable Precursors for the Fabrication of Carbon Dots

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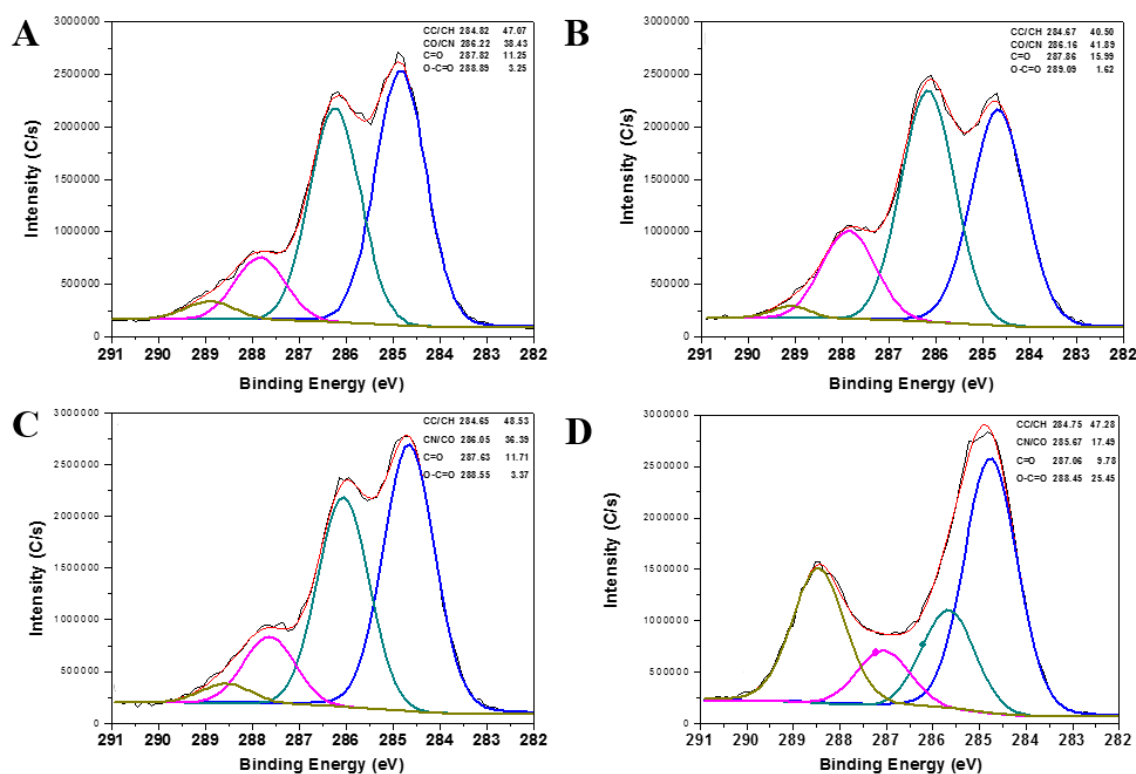
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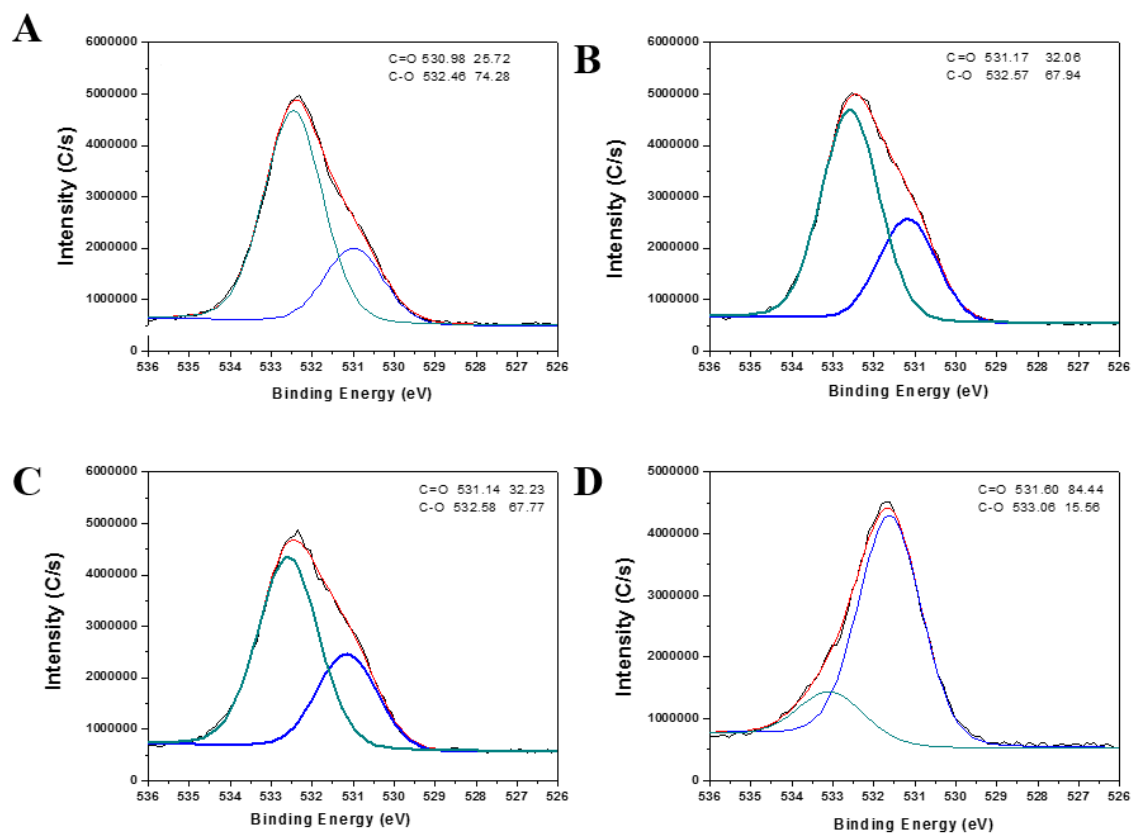
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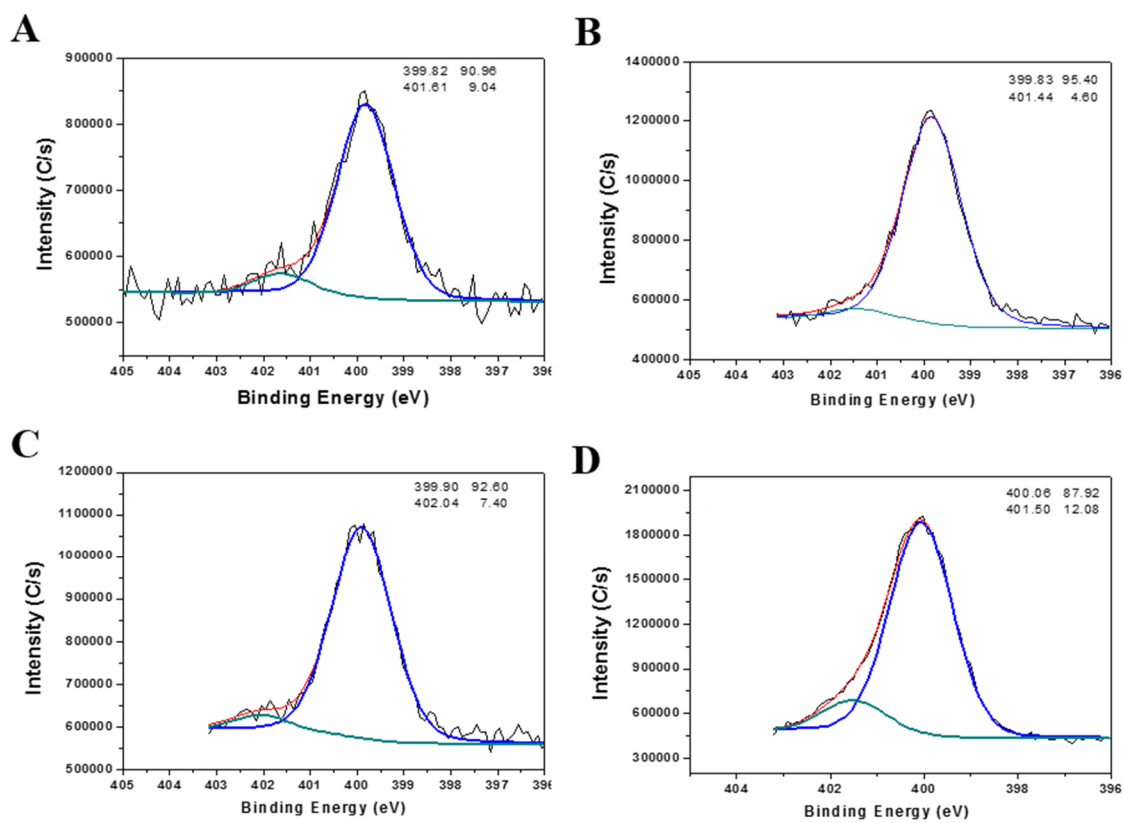
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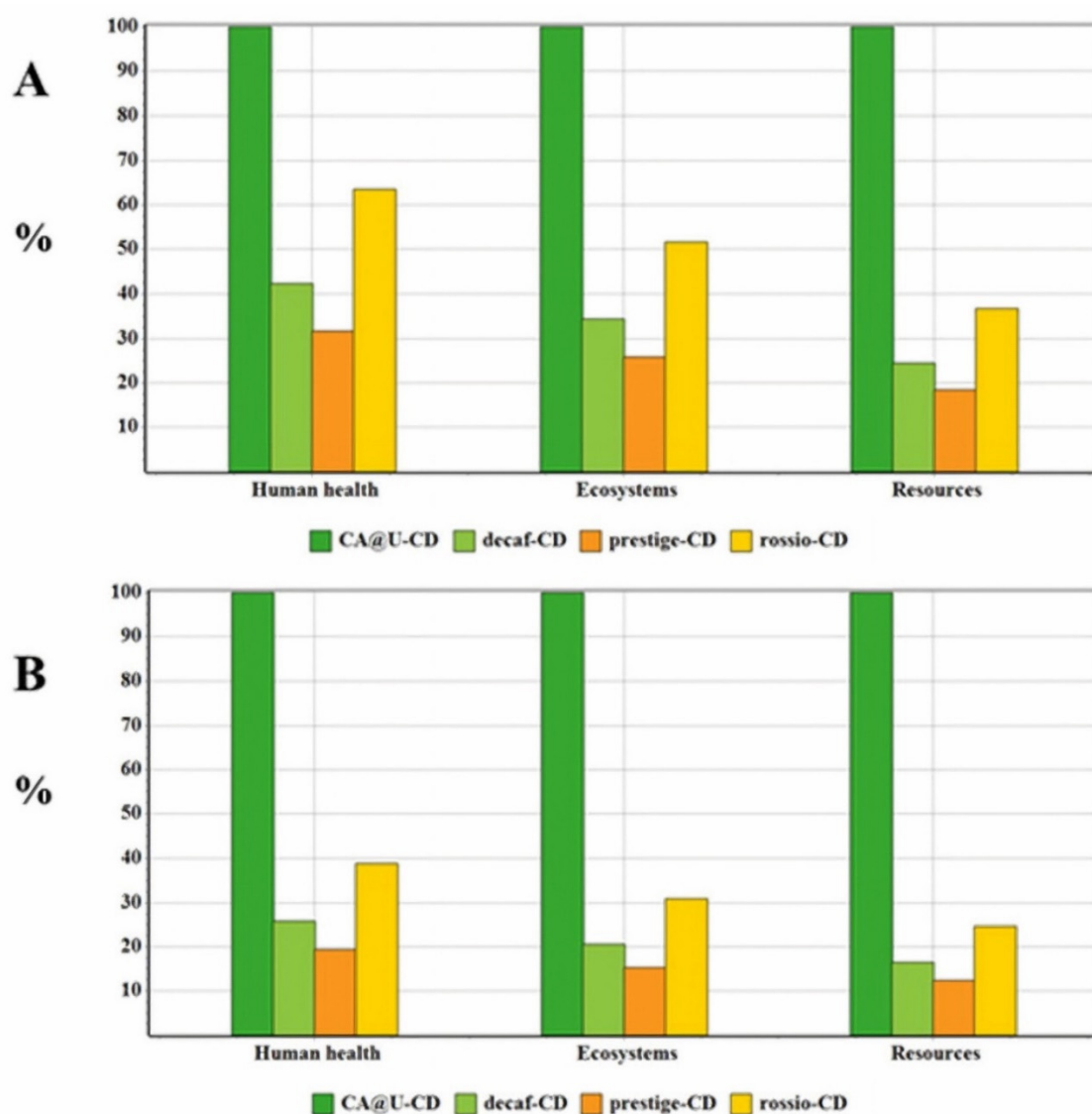
**Figure S1** – XPS C 1s spectra for decaf-CDs (A), rossio-CDs (B), prestige-CDs (c) and CA@U-CDs (D).



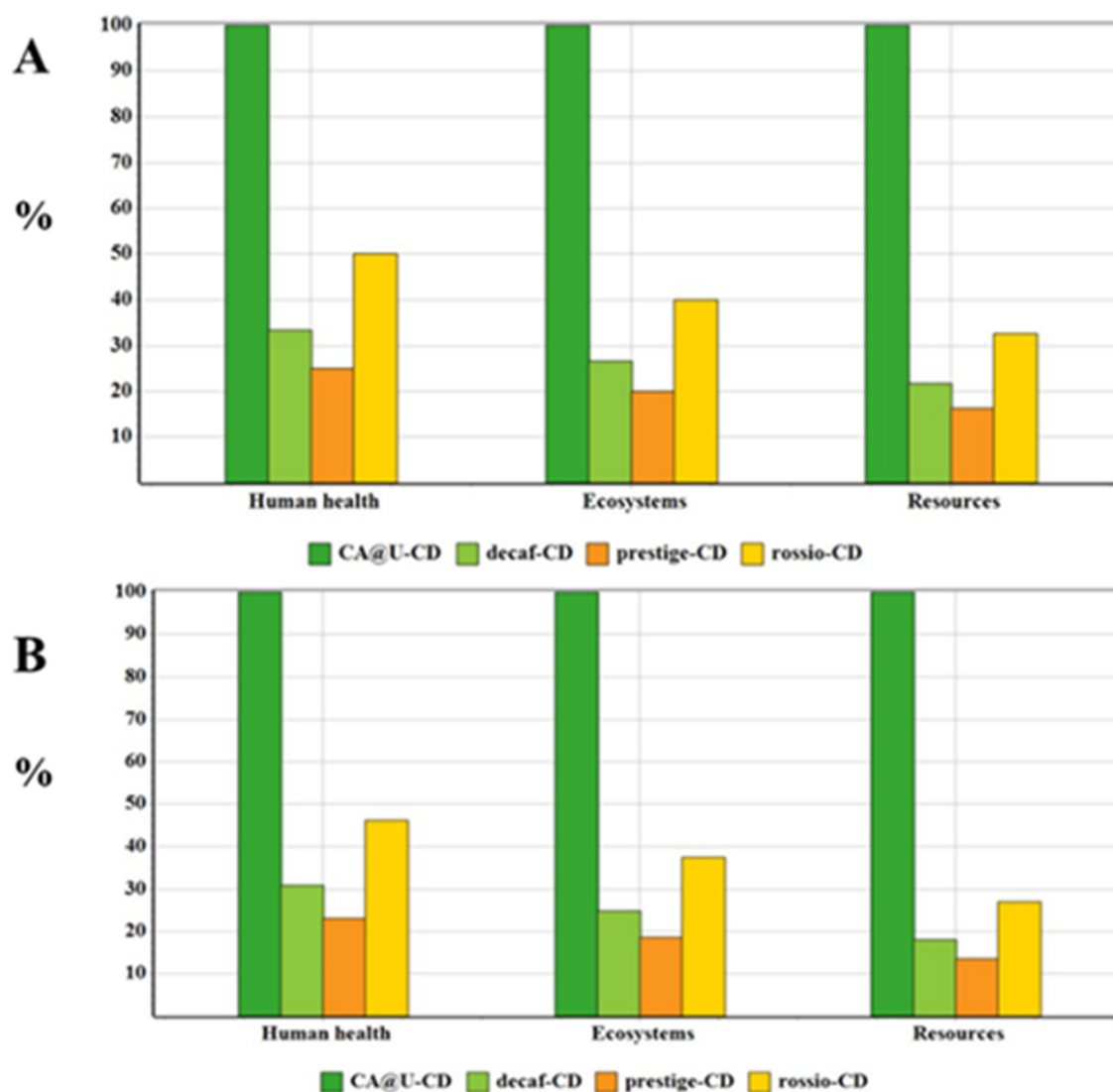
**Figure S2** – XPS O 1s spectra for decaf-CDs (A), rossio-CDs (B), prestige-CDs (c) and CA@U-CDs (D).



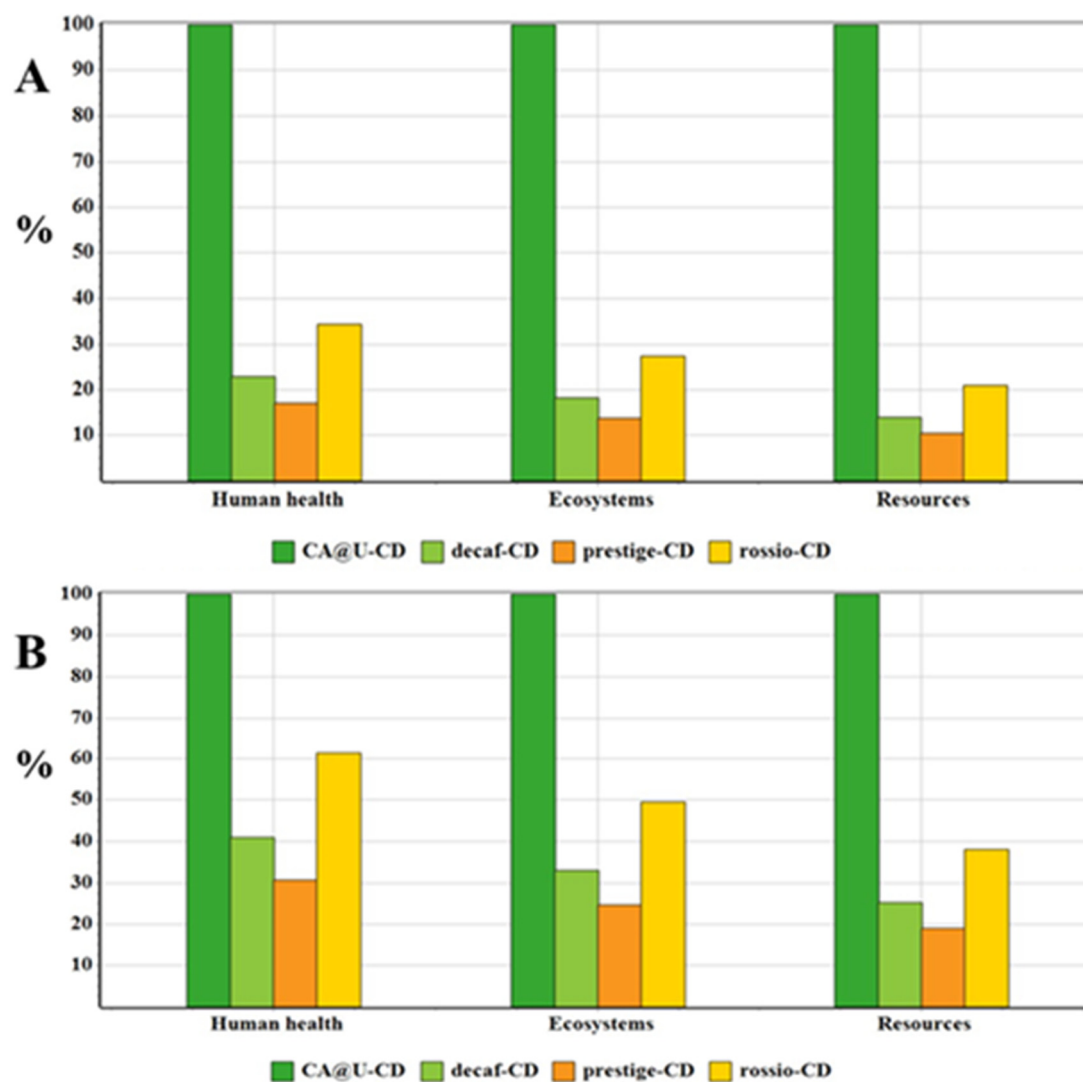
**Figure S3** – XPS N 1s spectra for decaf-CDs (A), rossio-CDs (B), prestige-CDs (C) and CA@U-CDs (D).



**Figure S4.** Comparative environmental profiles for the synthesis of all CDs, re-scaled with respect to the  $QY_{FL}$  of the CDs, by changing the input of citric acid to 70% (A) and to 130% (B) of the original value.



**Figure S5.** Comparative environmental profiles for the synthesis of all CDs, re-scaled with respect to the  $QY_{FL}$  of the CDs, by changing the input of urea to 70% (A) and to 130% (B) of the original value.



**Figure S6.** Comparative environmental profiles for the synthesis of all CDs, re-scaled with respect to the  $QY_{FL}$  of the CDs, by changing the input of electricity to 70% (A) and to 130% (B) of the original value.