

SUPPORTING INFORMATION

A Colorimetric Paper-Based Analytical Device for Glucose

Detection Using A Ferric-based Peroxidase Nanozyme

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SI.1. Characterization of synthesized FN-GQDs

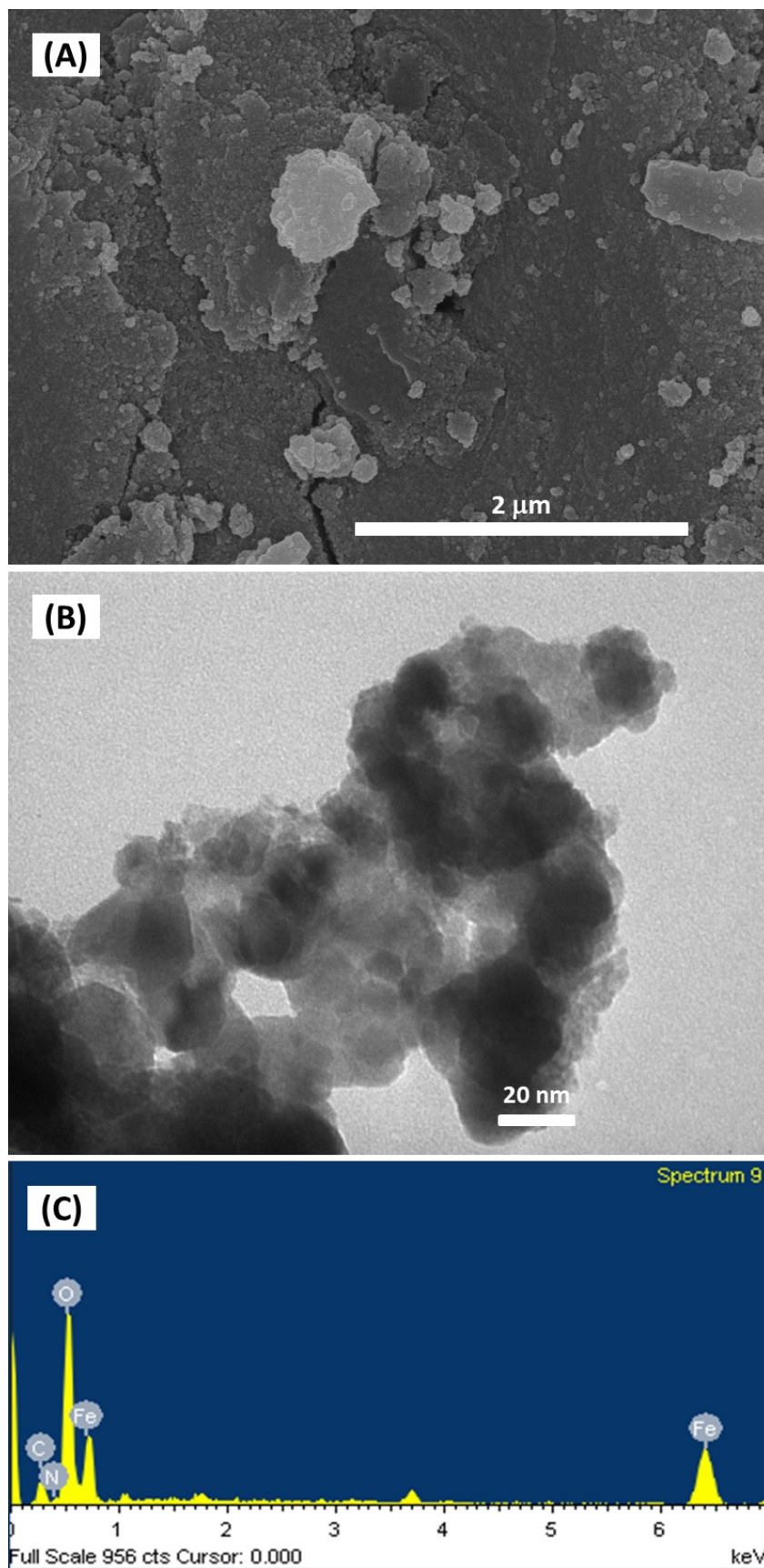


Figure SI. 1. (A) FESEM, (B) TEM and (C) EXD of as synthesized FN-CQDs

SI.2. Data processing for readout the gray intensity (GI) of g-PAD

In this report, the research team used Adobe Photoshop CS6 to measure the color intensity displayed on the PADs, following these steps:

Open the image and convert it to Grayscale mode to transform it into a grayscale image.

(Optional) Apply “Invert” to reverse the image colors. This step makes the gray intensity (GI) directly proportional to the intensity of the blue color from the TMB indicator on the paper.

Open the “Measurement Log” window, which provides the grayscale intensity (GI) values. Use the “Marquee Tool” to select the region of interest (ROI) for GI measurement. Select an area equal to the size of a PAD, then click “Record Measurement” to determine the GI value, which serves as the sensor’s readout. To minimize errors, move the selected region to another PAD on the same image to ensure consistent area size across all measurements, as GI values are only comparable when measured over identical areas.

Timeline		Measurement Log					
		Record Measurements					
	Label	Gray Value (Minimum)	Gray Value (Maximum)	Integrated Density	Gray Value (Median)	Gray Value (Mean)	
0001	Measurement 1	46.000000	130.000000	4839960.000000	96.000000	94.368273	

Figure SI. 2. "Measurement Log" window in Adobe Photoshop CS6

The average GI values, displayed in the “Gray Value (Mean)” column, will be used to construct the calibration curve for glucose quantification using the PAD method.