

Supplementary Information

Modification of Graphene based on $\text{Ba}_2\text{Cu}_8\text{Ni}_2\text{Se}_{12}$ Catalyst with CoS Nanosphere for Counter Electrode for Dye-sensitized solar cell

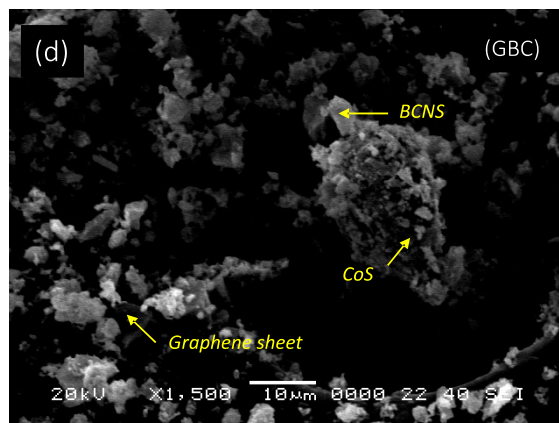
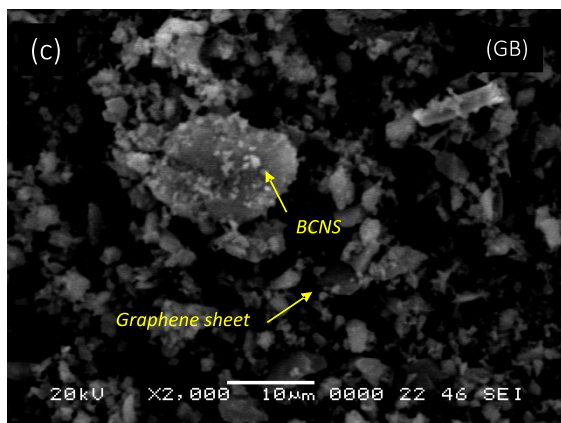
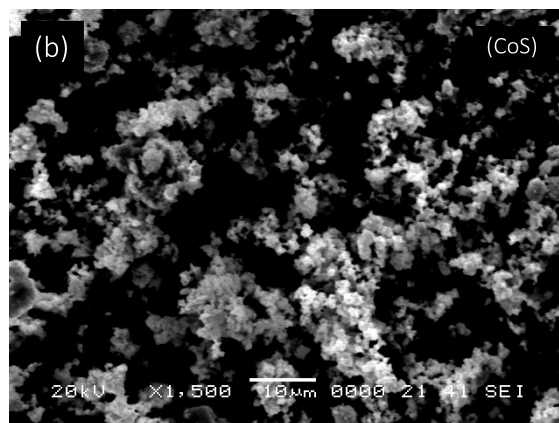
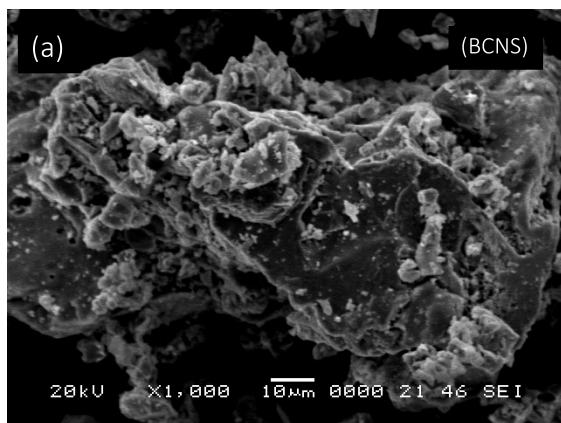
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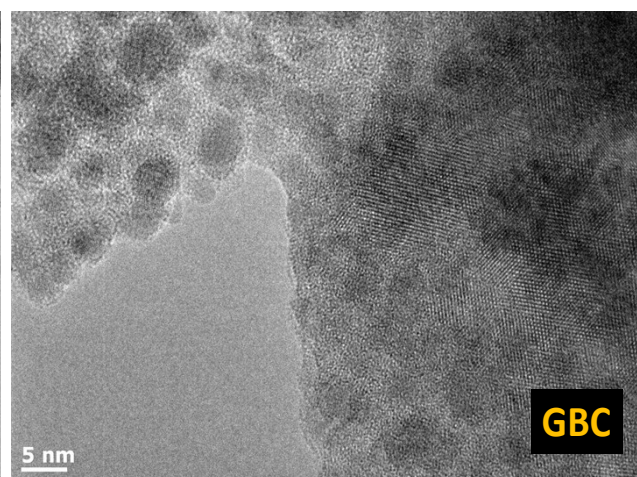
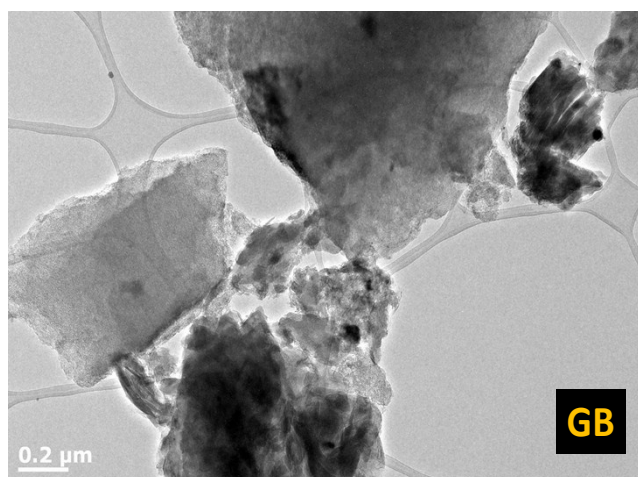
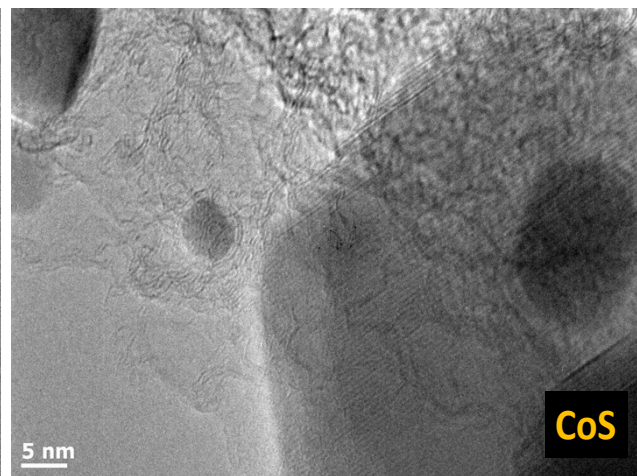
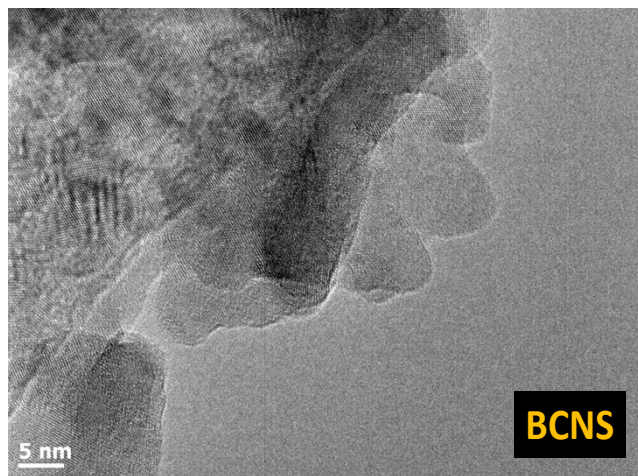
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Chungcheongnam-do, 31962, South Korea*

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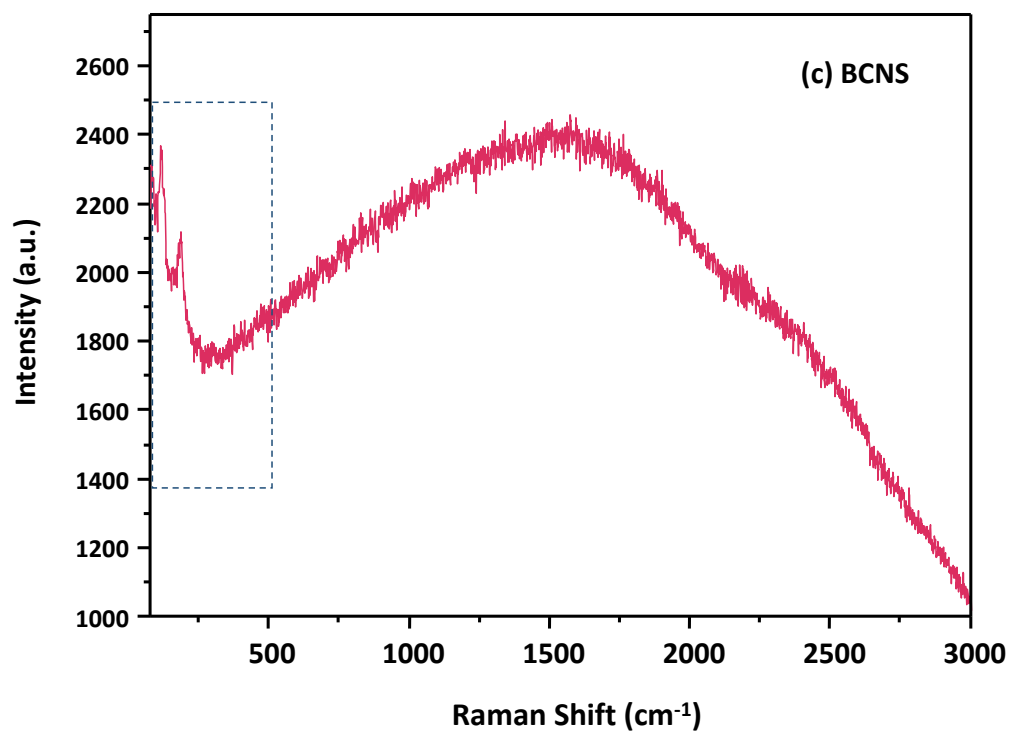
1. SEM images



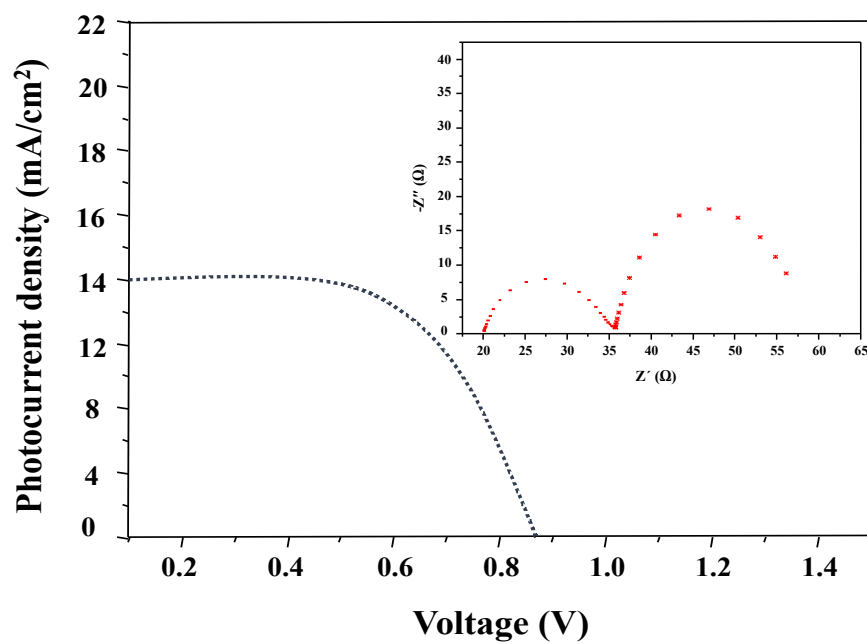
2. TEM images



3. RAMAN spectra



4. Electrical Performance of Pt counter electrode



CEs	Jsc	Voc	FF	PCE	Rs	Rct
	(mA cm ⁻²)	(V)	(%)	(%)	(Ω cm ²)	(Ω cm ²)
Pt electrode	14.01	0.87	48.55	5.92	20.39	15.21

5. Stability

