



Showcasing research from Professor Joongjai Panpranot's laboratory, Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand.

Room temperature synthesis of 3D-nanocrystalline graphitic carbon from biomass-derived sugars, alcohols, and polyphenolic compounds

We present an efficient method for synthesizing nanocrystalline carbon with sp^2/sp^3 hybridization using monosaccharides, disaccharides, alcohols, and polyphenolic compounds as carbon sources. The room-temperature electrochemical reduction of biomass-derived oxygenates occurs in an electrolyte solution comprising $[BMIM]^+ [BF_4]^-$, H_2O_2 , and water. This process employs negatively charged Ag cluster electrocatalysts on a Cu substrate, resulting in nanostructured carbon products within a relatively short reaction time.

As featured in:



See Joongjai Panpranot *et al.*,
Nanoscale Adv., 2024, 6, 4094.