



Showcasing research from Professor Plonska-Brzezinska's laboratory, Department of Organic Chemistry, Medical University of Bialystok, Poland.

Rational design of carbon nanocomposites with hierarchical porosity: a strategy to improve capacitive energy storage performance

The covalent triazine frameworks (CTFs) were organized three-dimensionally on the carbon nano-onion (CNO) surface, creating CTF-CNO systems with organized hierarchical porosity. High porosity, about $2000 \text{ m}^2 \text{ g}^{-1}$, the presence of interconnected pores and highly graphitized domains, and a high percentage of the pyridinic-N, the pyrrolic-N, and graphitic-N atoms significantly increased the electrochemical performance of the obtained composites. The efficient combination of all these factors made composites excellent electrode materials. Due to these features, the CTF-CNO materials showed attractive properties for practical applications in electrochemistry.

As featured in:



See Agnieszka Hryniewicka, Marta E. Plonska-Brzezinska *et al.*, *Mater. Adv.*, 2024, 5, 1065.