Legends for supplementary materials:

S1: XRD patterns of GDY nanoflakes and GDY-PpCANI.

S2: BET isotherms for N_2 adsorption by GDY nanoflakes, and their pore size distribution.

S3: BET isotherms for N_2 adsorption by GDY-PpCANI, and their pore size distribution.

S4: Real surface areas obtained by measuring BET adoption/desorption isotherms, surface pore volumes per weight, and the highest pore radii of GDY nanoflakes and GDY-PpCANI.

S5: Fifth cyclic voltammograms recorded in 1.0 mmol L^{-1} p-chloroaniline dissolved in a phosphate buffer solution using GC and GC/GDY electrodes.

S6: Double layer capacitance, geometric surface area, real surface area, roughness factor, and specific capacitance per geometric and real surface areas for different electrodes.

S7: Galvanostatic charge-discharge cycles of the symmetric supercapattery.

S8: A comparison of specific capacity (Q_s) of different supercapattery electrode materials.

S9: 5000 charge-discharge cycles recorded using the GDY-PpCANI electrode at a current density of 20 A g^{-1}.

S10: Changes in the capacitance and coulombic efficiency of GDY-PpCANI upon 5000 charge-discharge cycles. The data was attained from the results presented in Supplementary material S10.

S11: Cyclic voltammograms recorded using the GDY-PpCANI electrode at different potential sweep rate in a range of 10 to 800 mV s^{-1}.

S12: Plotting the logarithm of the maximum currents against the logarithm of the potential sweep rate for GDY-PpCANI.

S13: Illustrated results showing the separation of capacitive and diffusional components of the total capacity of GDY-PpCANI at potential sweep rates of 10 to 800 mV s^{-1}.

S14: Ragone plot for GDY-PpCANI.

S15: Cyclic voltammograms recorded using the GC/GDY-PpCANI electrode in 100 mmol L^{-1} sulfuric acid at different temperatures.

S16: Galvanostatic charge-discharge cycles at 25 A g^{-1} using the GC/GDY-PpCANI electrode in 100 mmol L^{-1} sulfuric acid measured at different temperatures.

S17: Galvanostatic charge-discharge cycles at different current densities of 3.0 to 18 A g^{-1} using the GC/GDY-PpCANI electrode in 100 mmol L^{-1} sulfuric acid measured at different temperatures.

S18: Dependency of natural logarithm of C_{sg} of GDY-PpCANI obtained from the average of anodic and cathodic currents in the entire range of swept potential of cyclic voltammograms (up), and that obtained from discharge parts of the galvanostatic charge-discharge cycles (down).

S19: E_a values obtained from cyclic voltammetry, and galvanostatic charge-discharge at different current densities.

S20: Nyquist diagrams recorded using the GC/GDY-PpCANI electrode, before and after 5000 cycles of charge-discharge.