Supporting Information

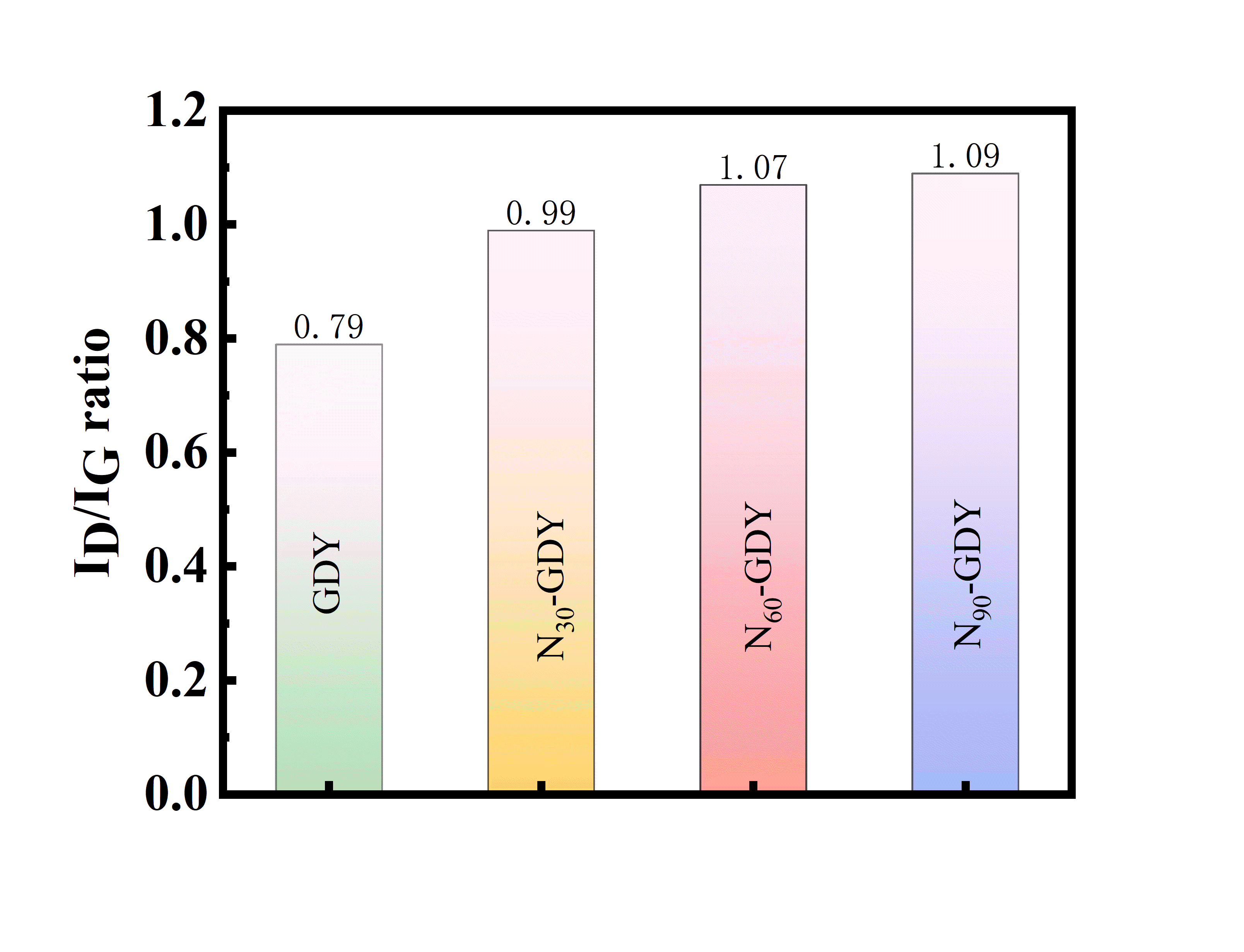


Fig. S1: The ID/IG ratios for GDY, N30-GDY, N60-GDY, and N90-GDY were 0.79, 0.99, 1.07, and 1.09, respectively.

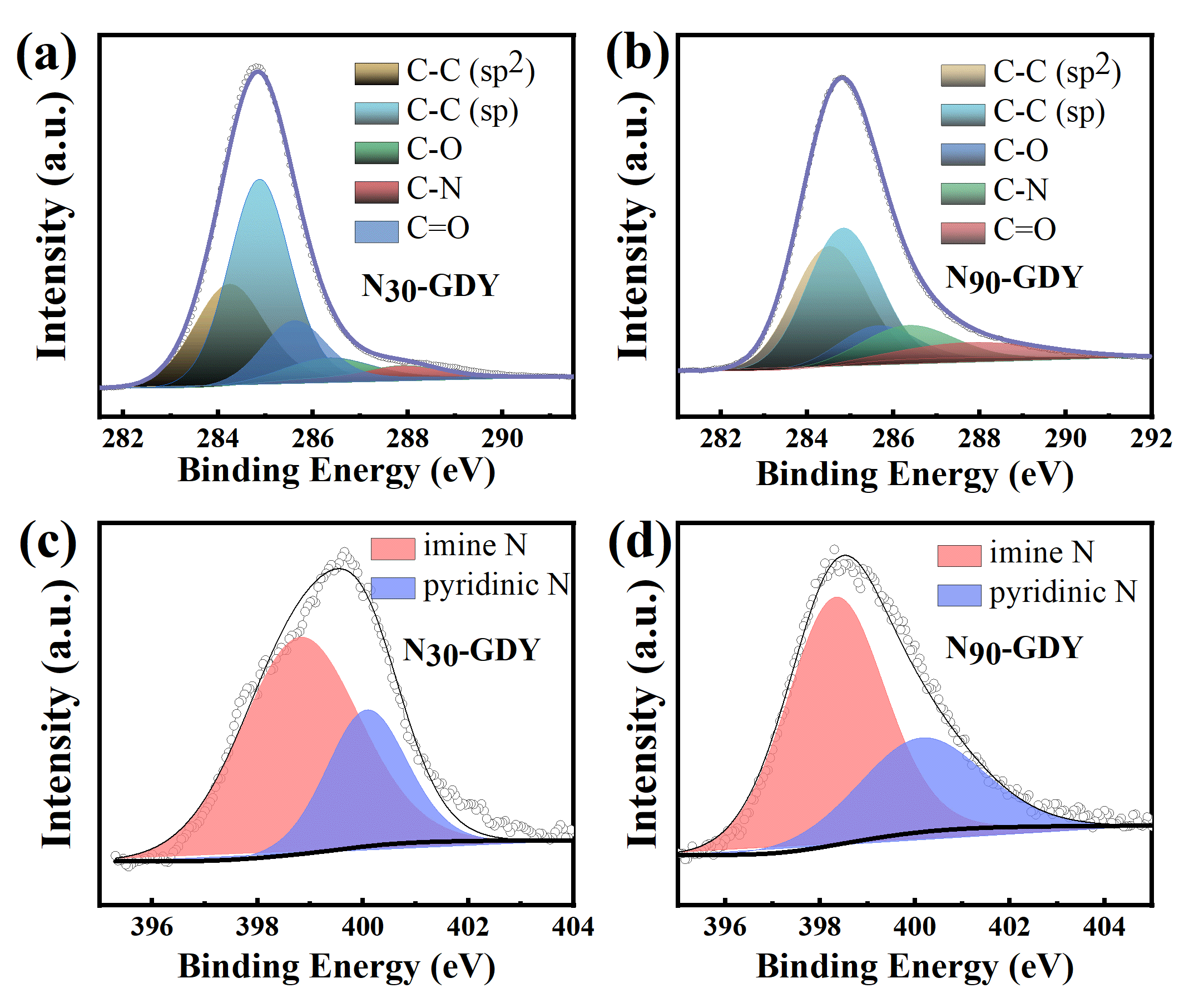


Fig. S2 (a) and (b) are XPS C 1s spectra of N30-GDY andN90-GDY, respectively. (c) and (d) is the XPS N1s spectrum of N30-GDY andN90-GDY, respectively.

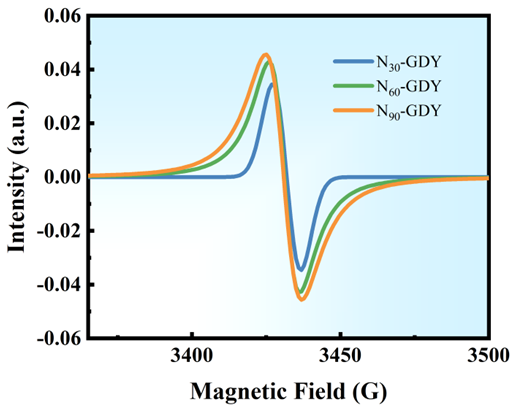


Fig.S3 The EPR spectrum of N30-GDY, N60-GDY and N90-GDY, respectively.

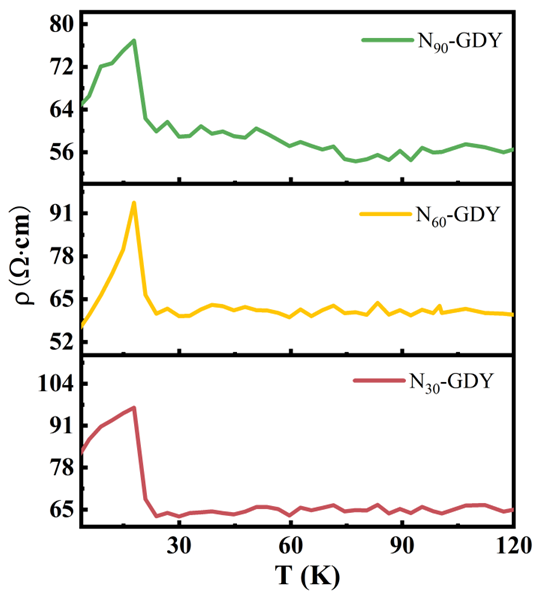


Fig.S4 Temperature dependent resistivity of N30-GDY, N60-GDY and N90-GDY, respectively.

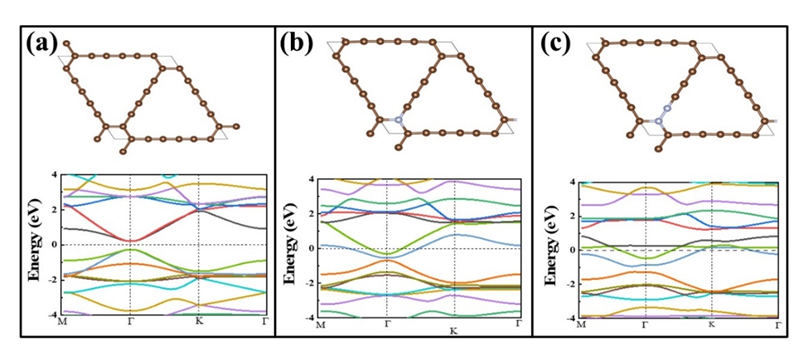


Fig.S5 DFT calculation (a) Band structure of GDY. (b) Band structure of 1N-doped GDY. (c) Band structure of 2N-doped GDY.

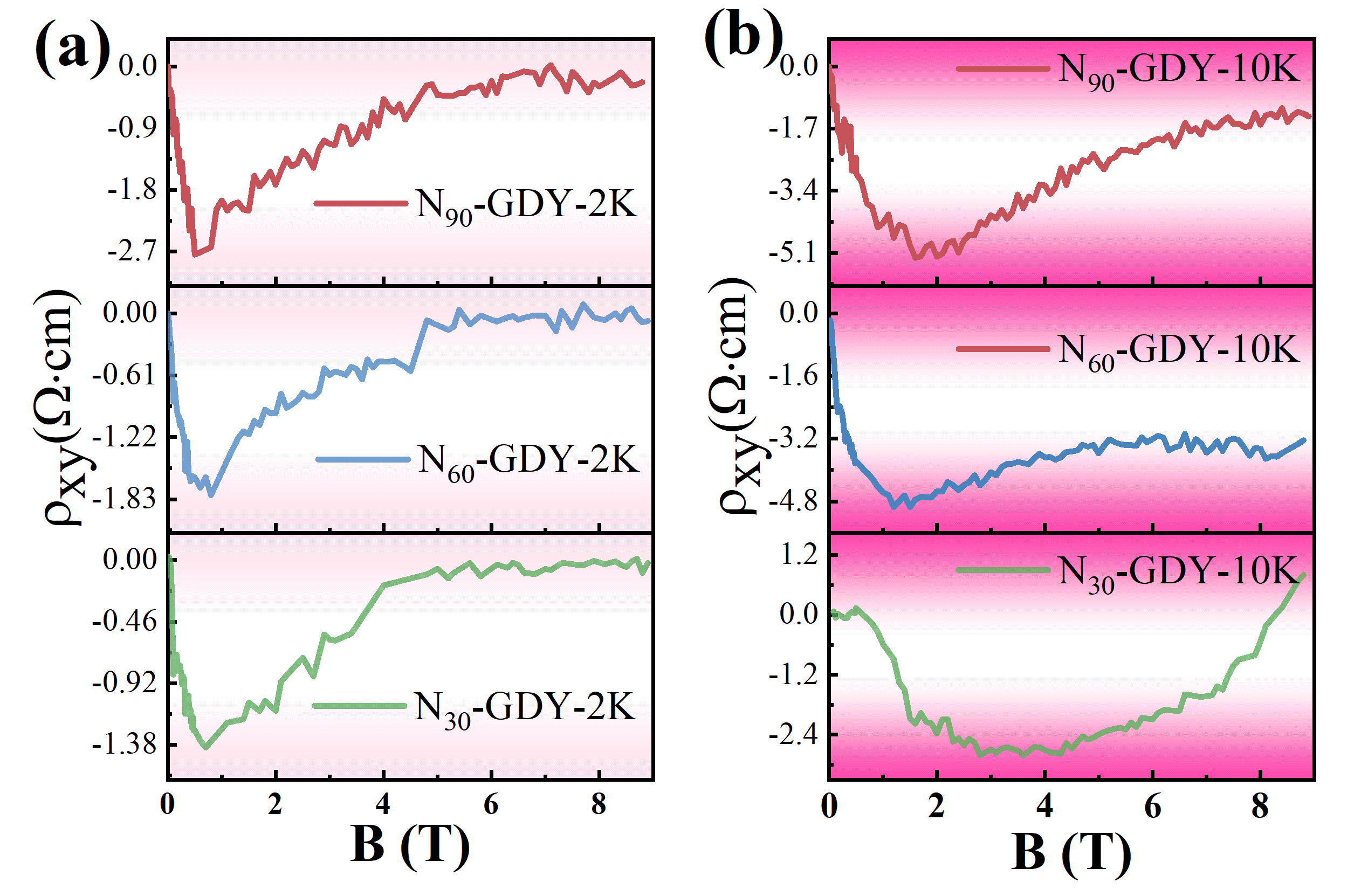


Fig. S6 Magnetic field dependent Hall resistivity of GDY at different

temperatures.

Table S1 Carrier density and carrier mobility for N30-GDY, N60-GDY, and N90-GDY with temperature dependence.

|  |  |  |
| --- | --- | --- |
| 2 K | n (×1019 cm-1) | μ (×10-2cm) |
| N30-GDY | 0.53 | 1.46 |
| N60-GDY | 1.89 | 0.60 |
| N90-GDY | 7.81 | 0.12 |
| 10 K | n (×1019 cm-1) | μ (×10-2cm) |
| N30-GDY | 0.20 | 3.3 |
| N60-GDY | 0.67 | 1.3 |
| N90-GDY | 2.5 | 0.34 |