

Supplementary Information

Robust negative differential resistance and abnormal magnetoresistance effects in heteroatom-substituted zigzag γ -graphyne nanoribbon homojunctions

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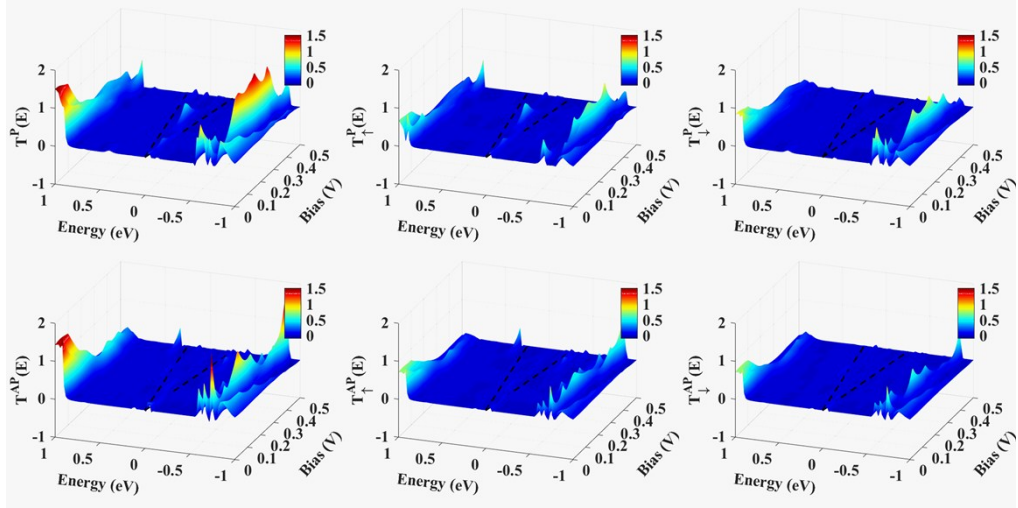


Fig. S1 Spin-resolved transmission spectra of O-substituted $Z\gamma$ GYNR homojunction for P and AP spin configurations. The black lines indicate bias window and the Fermi level is shifted to zero.

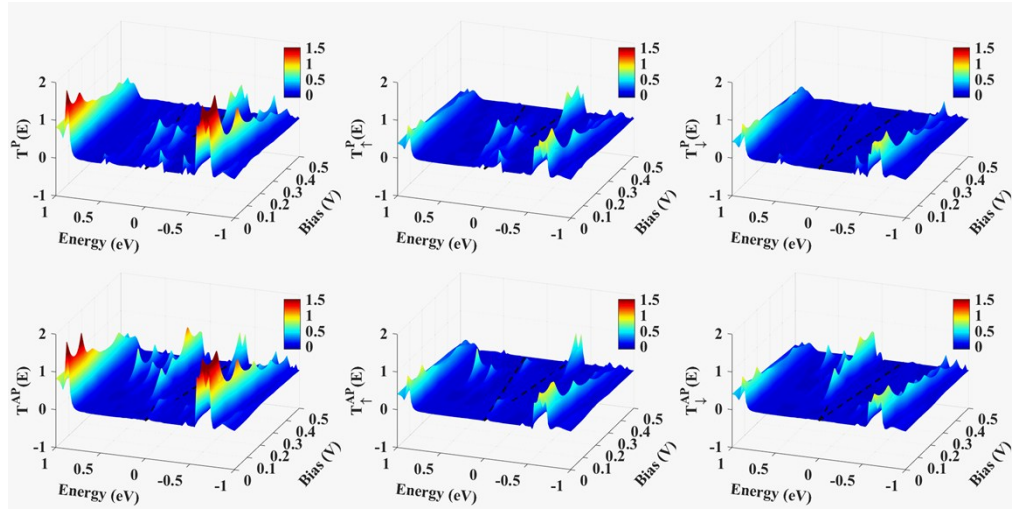


Fig. S2 Spin-resolved transmission spectra of B-substituted $Z\gamma$ GYNR homojunction for P and AP spin configurations. The black lines indicate bias window and the Fermi level is shifted to zero.

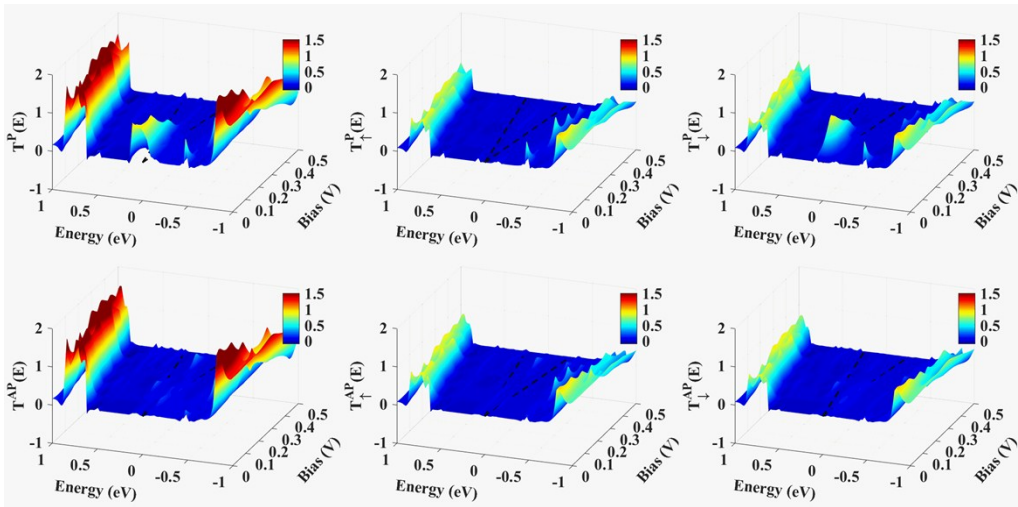


Fig. S3 Spin-resolved transmission spectra of N-substituted $Z\gamma$ GYNR homojunction for P and AP spin configurations. The black lines indicate bias window and the Fermi level is shifted to zero.