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Supporting Information for

Quantum Transport and Fractional Hall Effect in Moiré Correlated/Anticorrelated Interface Channels

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S1. Twisted armchair circular graphene nanoribbon band structures

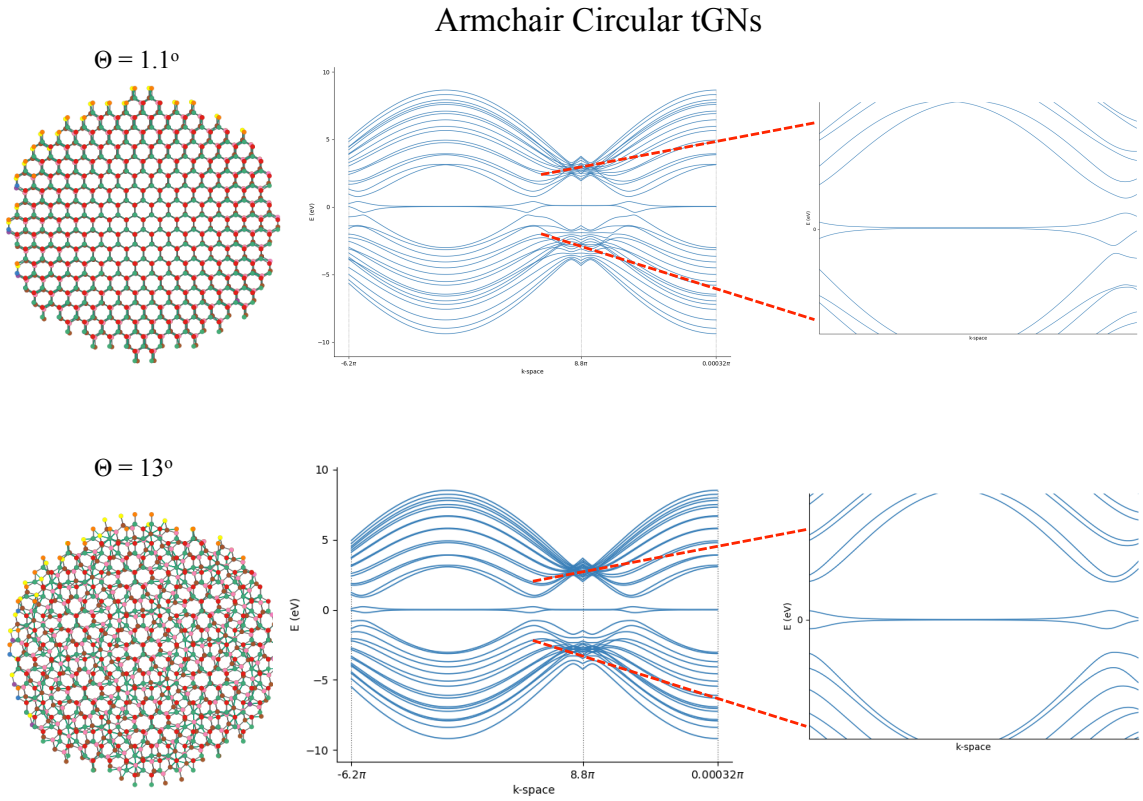

Fig. S1: Moiré pattern generated by rotation of two armchair circular graphene nanoribbons by magic angle $\theta = 1.1^{o}$ and $\theta = 13^{o}$. Band structure of armchair circular tGNs for magic angle $\theta = 1.1^{o}$ and $\theta = 13^{o}$.

S2. Twisted armchair rectangular graphene nanoribbon band structures

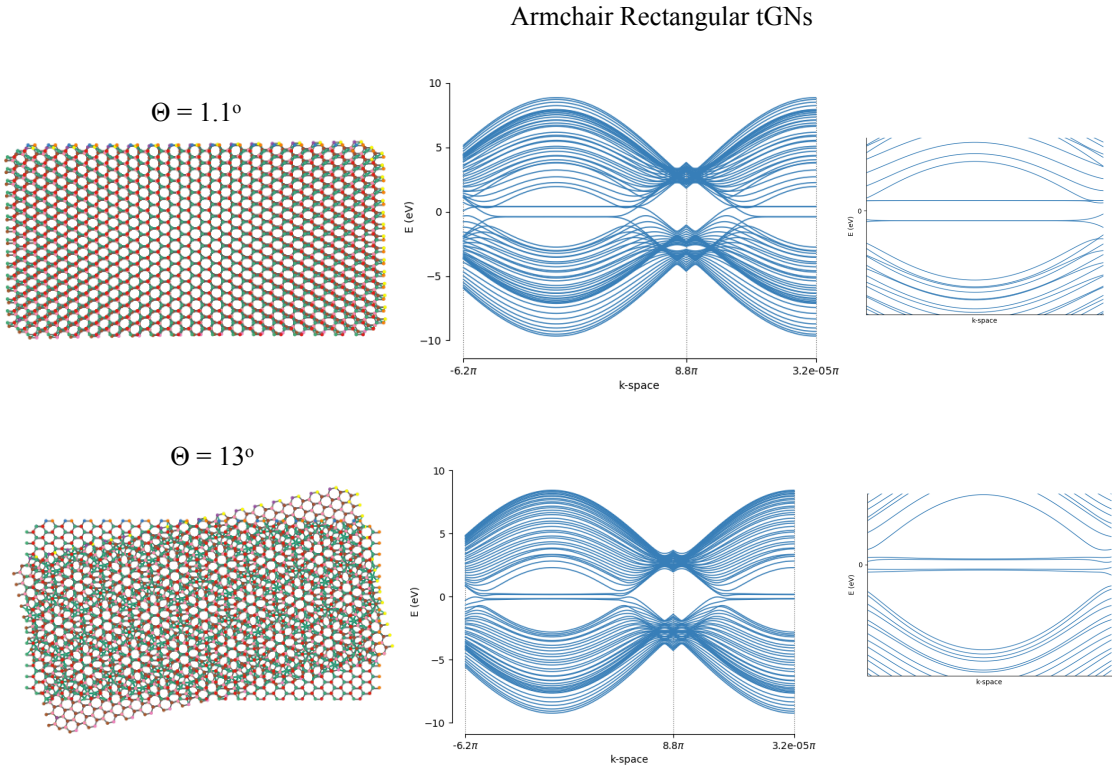

Fig. S2: Moiré pattern generated by rotation of two armchair rectangular graphene nanoribbons by magic angle θ = 1.1° and θ = 13°. Band structure of armchair rectangular tGNs for magic angle θ = 1.1° and θ = 13°.

S3. Local density of states and transmission of twisted armchair circular graphene nanoribbon

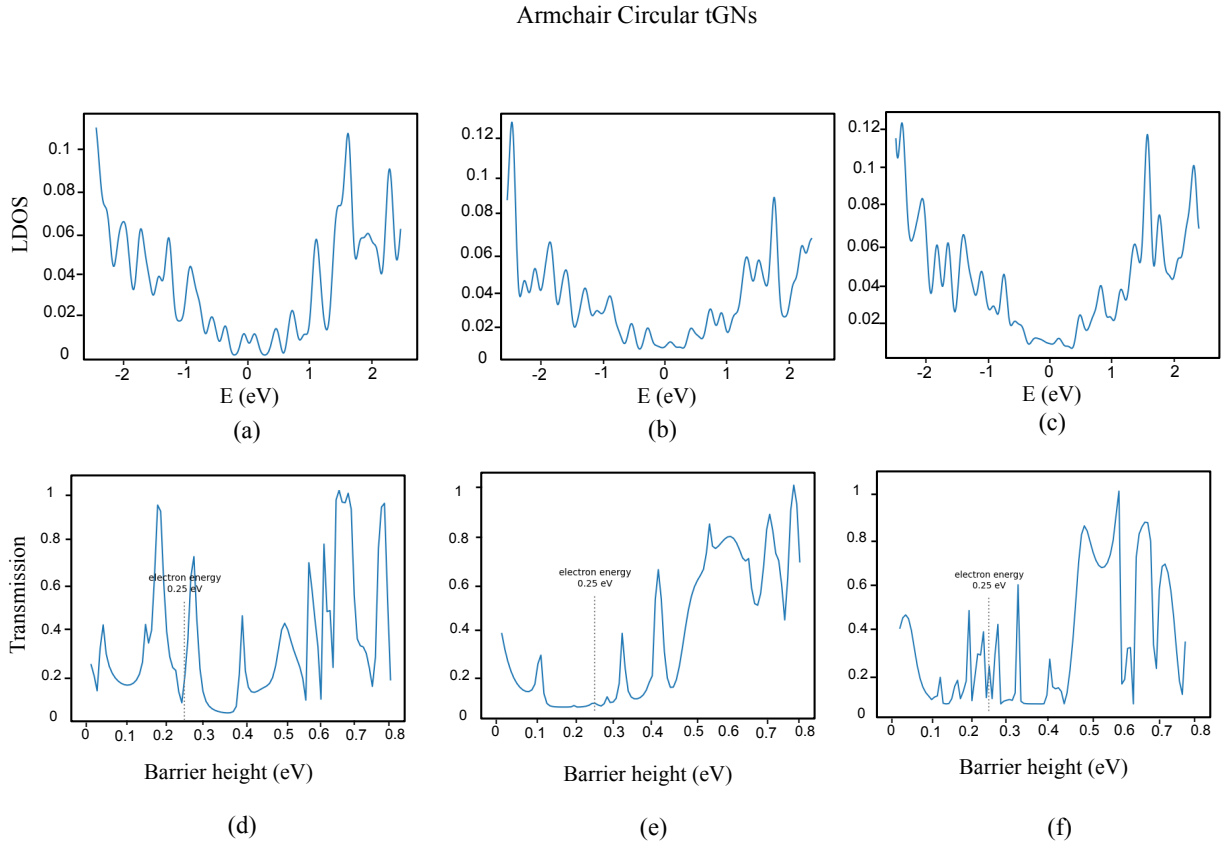

Fig. S3: LDOS (a-c) and electron transmission (d-f) of armchair circular tGNs at magic angle $\theta = 1.1^{o}$ and $\theta = 13^{o}$ and $\theta = 21.79^{o}$.

S4. Local density of states and transmission of twisted armchair rectangular graphene nanoribbons

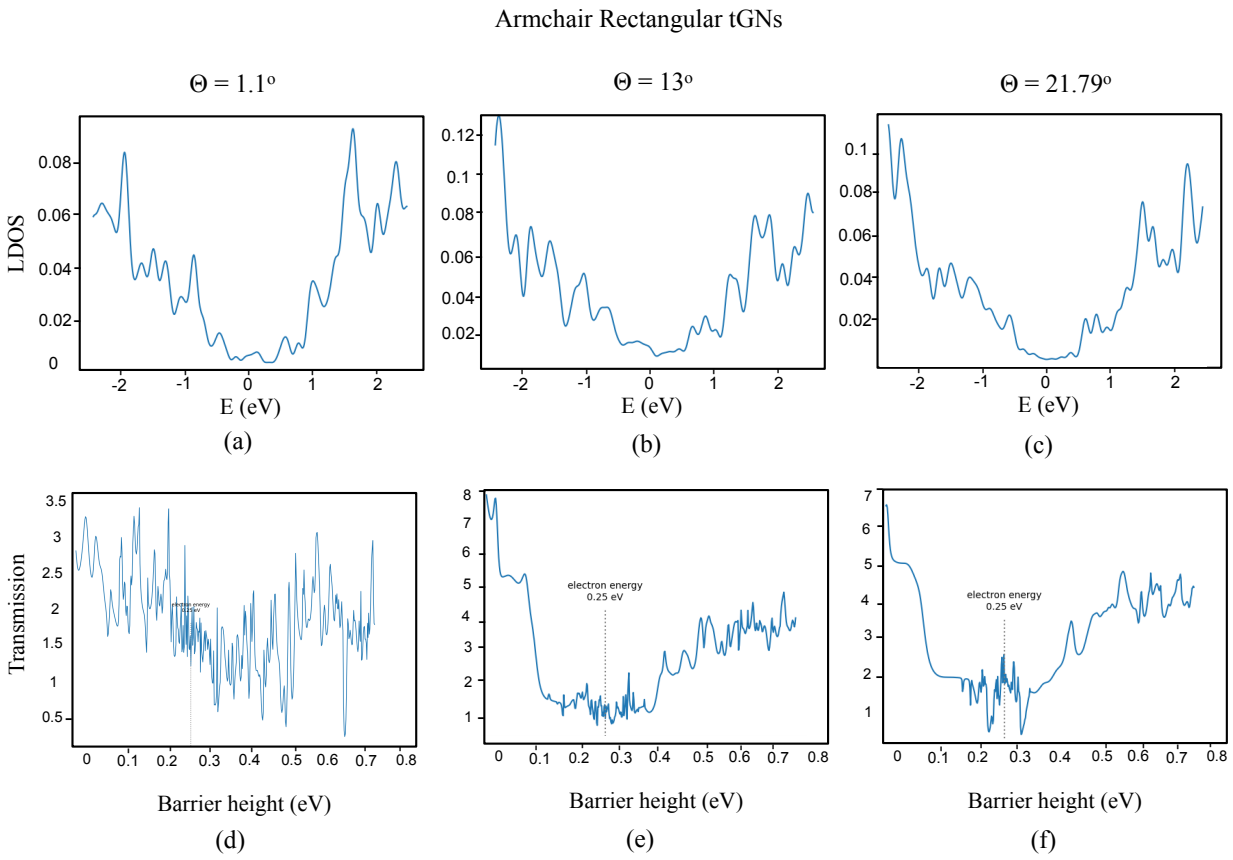

Fig. S4: LDOS (a-c) and electron transmission (d-f) of armchair rectangular tGNs at magic angle θ = 1.1° and θ = 13° and θ = 21.79°.

S5. Size Effect on Transmission of homo-twisted structures

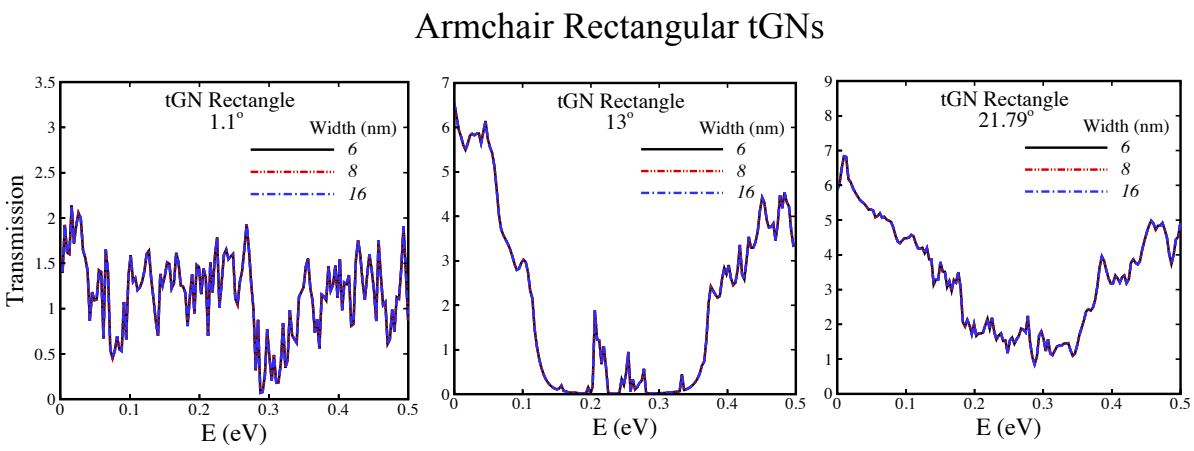

Fig. S5: Transmission of twisted armchair homostructure tGN (a-c) for different width at angle θ = 1.1° and θ = 13° and θ = 21.79°.

S6. Size effect on Hall effect of homo-twisted structures

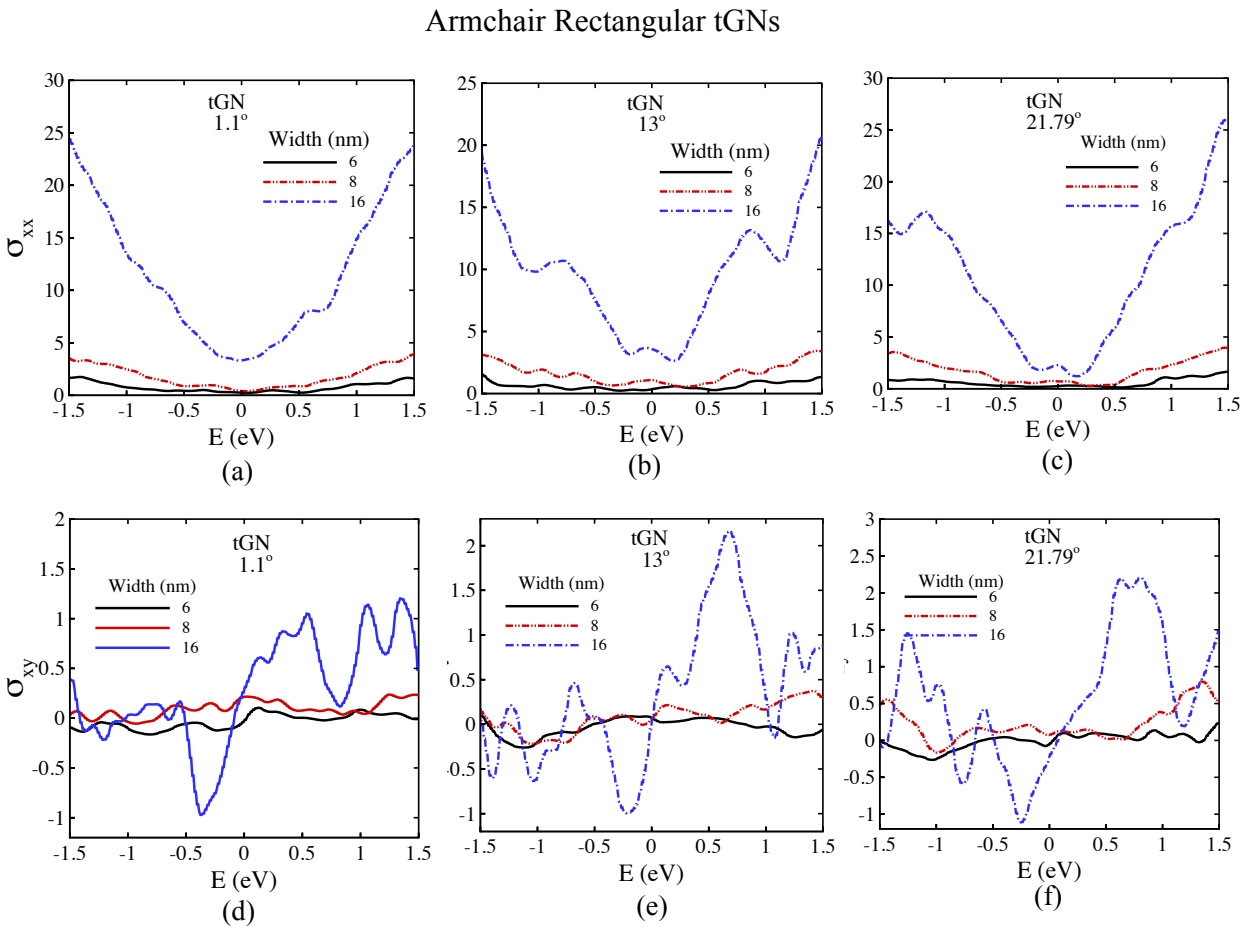

Fig. S6: Quantum Hall effect for different width of twisted heterostructure of armchair rectangular thGN; (a-c) the longitudinal conductivity σ_{xx} and (d-f) Hall conductivity σ_{xy} at field (B = 40 T) and at $\theta = 1.1^{o}$ and $\theta = 13^{o}$ and $\theta = 21.79^{o}$.