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Hydrocarbon based hybrid fusion-fission nuclear reactor ABUL HASANAT MUHAMMAD JAHANUR RAHMAN[1], Texas A&M Univ — Hydrocarbon resources can be used in more efficient ways through hybrid fission-fusion reactions. This offers longer supply of energy by using only a very small amount of fuel. Fusion reaction energy can be initiate using proton tunneling catalytic reactors that bypass the nuclear repulsion barrier at lower temperatures. This reactor uses mesosphore support made of pyroelectric and piezoelectric crystals. Pyroelectric convert the fusion temperature into electricity and piezoelectric control the diameter of porosity to determine diffusion and fusion reaction rate. This active catalyst is a quasi-crystal of fullerenes covered by a single layer of graphene. By providing a voltage difference across this catalyst, its conductivity can be changed. By using magnetic field, variable mass Dirac fermions (for example cooper electron-hole/phonon pairs) can be introduced within different conductive layers (heterogeneous topological layers or parallel quantum wells). Hydrocarbon by-products enter this catalyst from mesophores through microphores by carrier fluids which need to be supercritical and superfluid at input temperature and pressure. Zero mass Dirac fermions are very sensitive to the applied field by piezoelectric crystal supports which produce maximum charge carriers compared to other layers where electron pairs have less mass. The higher the momentum of these ions, the higher the mass of the Dirac fermions (electron). At the collision where Dirac electron mass higher than the effective electron, the probability of fusion increases due to an increase in gravitational pull between higher masses. This is controlled by resonance phonon frequency and the electric field.

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