

Electro-Kinetic Streaming to Tap Energy from Water

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Context : A team of researchers at the Indian Institute of Technology-Guwahati (IIT-G) has developed materials that can produce energy from flowing or stagnant water in households

- The decentralised energy model involving a large number of small generation devices can generate energy in every household
- It employed the nanoscale phenomenon called “Electrokinetic streaming potential” to harvest energy from flowing water on the small length scale like water flowing through household water taps.

Also “contrasting inter-facial activities” entailing different types of semiconducting materials to generate power from stagnant water.

- When fluids stream through tiny channels that are charged, they can generate an electrical voltage, which may be harnessed through miniaturised generators
- Graphene is modified in such a way that its electron density is manipulated; even stagnant water in contact with this form of graphene can produce energy
- Such an energy has not been harnessed because of low efficiency arising from the unsuitability of channels for the fluid stream