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1. Joint Development Agreement between India and Africa

Syllabus: GS II, International Relations, Bilateral agreements involving India

Mains: India's role in the development of African countries

Context: A joint development agreement was signed between Power Grid Corporation of India Limited and Africa50, the pan-African infrastructure investment platform to continue to develop the Kenya Transmission Project through [Public Private Partnership](#).

About the Project:

- The project involves the development, financing, construction and operation of transmission lines.
- Followed by its completion, the project will be Kenya's first Independent Power Transmission and will set a reference point in Africa as the first financing of transmission lines on a PPP basis.
- The technical operational support would be provided by [POWERGRID](#) which is one of the world's leading electric transmission utility companies.
- Africa50 will assist the project by bringing its expertise on development and finance bridging the gap between the Kenyan government and private investors.

Africa50:

- It is an infrastructure investment platform that contributes to Africa's economic growth by developing and investing in bankable infrastructure projects, catalysing public sector capital and mobilising private sector funding.
- It presently has 31 shareholders comprising 28 African countries, the African Development Bank, Central Bank of West African States (BCEAO) and Bank Al-Maghrib.

Significance of the Project:

- This joint agreement will promote the collaboration between the two Governments of Kenya and India and this transmission project will act as a model for undertaking more such projects focusing on the development of power transmission networks across Africa that will improve electricity access especially in the deprived communities.
- The aims and objectives of the project to bridge the gap existing in the power transmission network will witness an essential role played by India and take the historic friendship between India and Africa to the next level.

Read more about [India – Africa Relations](#) in the linked article.

2. Electro Active Nanoparticles

Syllabus: GS III, Technology, Awareness in the field of nanotechnology

Prelims: Facts related to Nanoparticles and their applications

Context: A team of scientists from the Institute of Nano Science and Technology has been successful in achieving a phase of nanoparticles that offers potential applications in touch and acoustic sensors by the application of the lowest possible electric field.

Applications of the study:

- It was observed through the study that the piezoelectric properties of nanoparticles contribute to their practical applications as pressure mapping sensors and acoustic sensors.
- The high acoustic sensitivity of the devices with nanoparticles indicate the detection ability of acoustic noises, speech signals, respiration motion and other wide range of technological applicability.
- The PVDF (Polyvinylidene Fluoride) nanoparticles can be of enormous significance in the treatment of Alzheimer's disease creating futuristic opportunities in the health care sector.

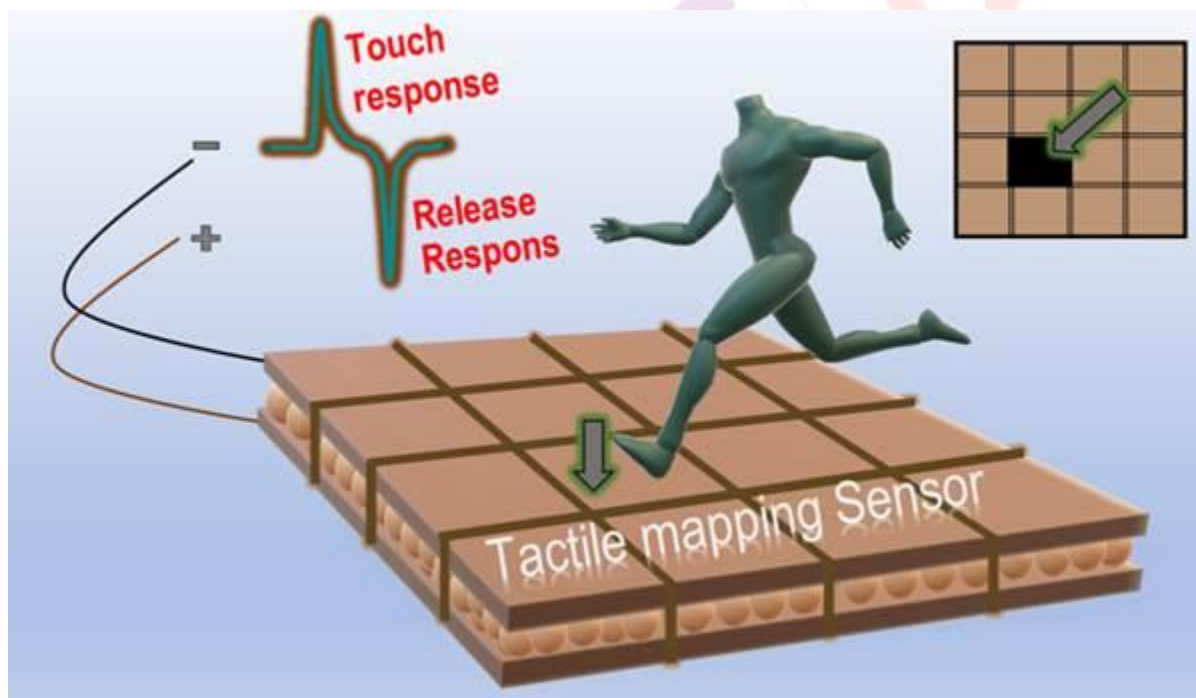


Image Source: PIB

About Nanoparticles:

- Nanoparticles are tiny materials having sizes ranging from 1nm to 100 nm (nanometre).

- Fullerenes, metal nanoparticles, ceramic nanoparticles and polymeric nanoparticles are different groups of nanoparticles that possess unique physical and chemical properties due to their high surface area and nanoscale size.
- Micelles, dendrimers, and liposomes are also grouped under nanoparticles.
- Carbon-based nanoparticles found in carbon nanotubes, graphene and carbon dots have useful properties such as high electrical conductivity, strength, structure and electron affinity.
- Scientific data reveals the total surface area of nanoparticles is a reasonable metric to describe the toxicological responses in the biological systems.
- These particles may exist as a single particle or as agglomerates/aggregates.
- The quantum effects become prominent at the nanoscale of matters influencing their optical, electrical and magnetic behaviours.

Read more about [Nanotechnology](#) in the linked article.

3. 25th National Youth Festival

Syllabus: GS I, Society

Prelims: Youth festival, Swami Vivekananda

Mains: Role of youth in progress of the nation

Context: The Prime Minister inaugurated the 25th National Youth festival which was hosted by Puducherry and paid homage to the venerable personality of Swami Vivekananda on his birth anniversary. The event was organised virtually due to the emerging COVID-19 situation.

Highlights of the event:

- The youth festival aims to shape the minds of the youth and encourage them to take up a transformative step under the vision of eminent personalities like Vivekananda and act as a united force.
- It also intends to ignite the spirit of nation-building among the youth upholding the potential of our [demographic dividend](#).
- The festival creates a platform for interaction between the youth exchanging their diverse socio-cultural uniqueness. This serves the purpose of the exemplary initiative of [Ek Bharat Shreshth Bharat](#).
- The opportunity to express views on important issues like environmental challenges, climate change, [SDG](#) led growth, and ancient wisdom was given to the youth across the country in the National Youth Summit that followed the inauguration ceremony.
- It has been considered and acknowledged that the youth of the country is writing the code of global prosperity.

Read and explore the personality of [Swami Vivekananda](#) in the linked article.