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State turns to DSC technology for clean energy

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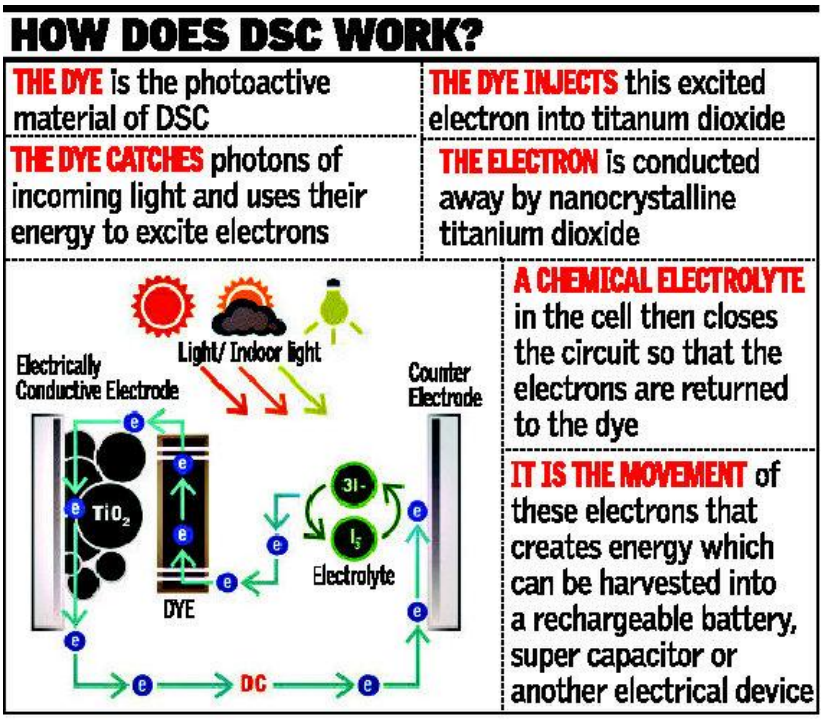

Imagine a backpack that lets you power your mobile phone on the go, building facades and wall panels that use solar power and indoor lighting to generate electricity round the clock and flexible solar panels that can be rolled up or stitched into a tent or shamiana. Concepts like these are no longer the stuff of science fiction.

Driven by the global demand for clean, renewable sources of power, scientists are turning to Dye Sensitized Cell (DCS) technology to develop lightweight, flexible and cost-effective solutions for a variety of applications. The Kerala State Council for Science, Technology and Environment (KSCSTE) has taken the initiative to introduce the technology in the State through a tie-up with leading institutions in the field.

On Thursday, the council organised a discussion meeting here with the representative of the Taiwan DSC Photovoltaics to explore the possibility of deploying the disruptive technology in select areas. Officials from various government departments and research institutions attended the meeting.

Addressing the participants, Tim Lai, General Manager, Taiwan DSC PV, said DSCs could offer substantial savings in power consumption. He said the technology offered the advantage of harnessing both sunlight and indoor lighting. It was the best power solution under low light conditions. Mr. Lai said the company was developing DSCs for self-powered wireless sensors and detectors and wearable devices. “DSCs are flexible, customisable and need no maintenance. Cheap and easy to install, they are the best option for smart buildings”.

Suraj Soman, Inspire faculty, CSIR- National Institute for Interdisciplinary Science and Technology, said DSCs had the potential to be developed as a power source for IoT (Internet of Things) devices and mobile phones, provide solar installations in remote areas and alternative power for buildings and vehicles.

A viable source of renewable energy for the future, DSCs represent the third generation of photovoltaic cells that convert visible light into electrical energy to power a broad range of electronic devices.

They constitute semiconductor nanocrystals coated with organic dye and sandwiched between glass panels or plastic films, along with an electrolyte. The dye is the photoactive material of DSC, and can produce electricity once it is sensitised by light.

Cheaper than conventional silicon solar panels, DSCs can be printed on flexible surfaces and work more efficiently in ambient light conditions.

Dye Sensitized Cell is a viable source of renewable energy for

the future.