

The focus of Environment Information System (ENVIS) is to disseminate environmental information to decision makers, policy planners, scientists and researchers across the world.

The CERC-ENVIS Resource Partner focuses on "Environment Literacy Eco-labelling and Eco-friendly Products." This bi-monthly e-bulletin features latest news, developments and innovations in the field.

A device that generates power from polluted air with sunlight



A new device promises in purifying polluted air, while at the same time producing hydrogen, which can be stored for use as a clean energy source. Researchers from two Belgian schools, the University of Antwerp and KU Leuven, have discovered a process that can be used to address two disparate yet related issues - the need for air pollution mitigation and cleaner energy sources - with nanomaterials and sunlight. The process and materials are sufficiently optimized to be put into use on an industrial scale, but the researchers' progress speaks to a future where air pollution becomes a potential energy source instead of an energy sink and major health concern. The paper is available in the journal *ChemSusChem*.

Source: <http://onlinelibrary.wiley.com/doi/10.1002/cssc.201601806/abstract>

Eco product

Eco-Friendly Cellulose Nanofibers control release of pesticides

A controlled release system, comprising a biopolymer and nanomaterial derived from natural wastes, has potential applications in agriculture. Scientists have found a solution in the form of controlled release formulation systems to curb overuse of pesticides in farming. Overuse of pesticides is posing a major hazard to human health and the environment. Scientists from National Chemical Laboratory (NCL) of Council of Scientific and Industrial Research (CSIR), Pune have developed an eco-friendly controlled release formulation system, for applying agro-chemicals in agricultural fields. The system has been developed by blending sugarcane bagasse with gelatinized maize starch and urea formaldehyde to form nano-composite granules. The growing problem of micro-plastic pollution has made it necessary to focus more on producing controlled release systems based on biodegradable micro-capsules from sustainable feed stocks. The new system developed by the scientists is a move in that direction. The mechanism of the system is that when the granules were applied in the field, the starch in them absorbs water, swells and releases the pesticide at a controlled rate. Addition of cellulose nano-fibres from bagasse enhanced the efficiency of the system. They found that as the release rate of the active agent depends on the level of water absorption, different type of controlled release formulation systems can be developed depending on the type of soil, irrigation pattern and moisture content of the soil.

Dr. Parashuram Shukla, a pioneer in the field of micro-encapsulation, and a former senior principal scientist involved in this research, noted, "NCL has developed a broad range of CRFs (controlled release formulations) over a period of three decades." Research team leader Dr. K. Shanmuganathan said that in future the division wanted to extend the research to make use of controlled release formulations for control of weeds in sugarcane crops. The study has been published in journal *ACS Sustainable Chemistry and Engineering*.

Source: <https://pubs.acs.org/doi/abs/10.1021/acssuschemeng.8b01545#>

Green issue



Eco news

India's electric vehicle (EV) revolution



To successfully create a shift away from Fossil Fuel, India requires a robust ecosystem. To meet this requirement, electric scooters and e-rickshaws, have led adoption in India so far. In 2019, there will be a line-up of cars significantly expanding the options for car customers. Car industries like Mahindra Electric, Hyundai, Nissan and Tata are set

to introduce these models next year and now Indian customers have a large options and a decent range to choose from. To facilitate the widespread adoption of electric vehicles (EV), the Ministry of Power has announced guidelines and standards for the development of electric vehicle charging infrastructure. To speed up EV revolution, the government is planning to subsidize its EV charging infrastructure.

Source: <https://mercomindia.com/ev-charging-station-guidelines-announced/>
<http://www.newindianexpress.com/business/2018/nov/23/electric-year->

Katowice climate change: what it means for India

The United Nations Framework Convention on Climate Change (COP 24) saw parties broadly agree on key elements of a 'rule book' to assist the implementation of the historic Paris climate agreement that came into force in 2016. India has demonstrated commitment and leadership during COP-24 by reaffirming its promise to implement the Paris deal in its spirit and to act collectively to address climate change. But it expressed strong reservation over the lack of equity in the global stock take decision, a proposed five-yearly review of the impact of countries' climate change actions. India had expected that decisions would be in consonance with the principles of the United Nations Framework Convention on Climate Change and the Paris pact.

Source: <https://pursuit.unimelb.edu.au/articles/our-last-best-chance-to-stop-runaway-climate-change>



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Green Clean Your Bathroom

Your green efforts will be totally negated if you're wasting water, switch to low-flow fixtures, you can save thousands of liters of water.

Eco tip

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Consumer Education and Research Centre

"Suraksha Sankool", S. G. Highway, Thaltej, Ahmedabad – 380 054. Tel : 079-27489945/46, 27450528, 27438752/3/4 Email : cerc-env@nic.in, cerc@cercindia.org
Website : www.cercindia.org