

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.

Eco product

A GM houseplant can purify the air in home

Researchers at the University of Washington have genetically modified a common houseplant --



Pothos Ivy -- to remove the volatile organic carcinogens (VOCs), such as formaldehyde, benzene, and chloroform from the air around it. They made a synthetic form of the rabbit version of a gene known as 2E1. Then they introduced it

into the plant so that each cell in the plant expressed the protein. The modified plants transform these compounds into molecules which plants can then use to support their own growth also. This gene is found in many mammals, including humans and produces an enzyme that breaks down a range of chemicals in the body. This paper is published in *Environmental Science & Technology*

Source: <https://www.sciencedaily.com/releases/2018/12/181219093911.htm>

Eco news

Gujarat launches trading scheme to reduce air pollution

First such initiative in the world and country, Gujarat government has started a market based Cap-and-Trade system in particulate matter to reduce air pollution. Under the programme, the government sets a cap on emissions and allows industries to buy and sell permits to stay below the cap. The scheme aims to lower the cost of compliance for industries,

while meeting the state's air pollution targets. For effective and efficient pollution control, the programme will be experimentally tested to understand its impact on emissions, industry costs and regulatory costs. The programme builds on work by the Gujarat Pollution Control Board in using continuous emissions monitoring systems to track industry emissions in real time.

Source: <https://www.livemint.com/science/news/india-launches-emissions-trading-programme-to-reduce-air-pollution-1559799447842.html>

Take a Challenge: Plant a tree

"We can't Stop Breathing; But We can do something about the quality of Air we breathe!" -Michael Lovave

Visit CERC-ENVIS website www.cercenvnis.nic.in and <https://www.facebook.com/EcoProductsEcoLabeling> to know more about our activities.

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

Air Pollution: Its causes and effects on Health & Environment

Air pollution is a mix of particles and gases that can reach harmful concentrations both outside and indoors. The main causes are emissions from industries (like manufacturing units, power plants, chemical industries etc.); exhaust from transports (automobiles, airplanes, ships, cargos etc.); release of dust and mine gases in mining activities; release of ammonia from rice paddies; livestock, usage of fertilizers, pesticides etc., open burning of waste, crop residue and fuel for household activities and from natural activities like sand storm, volcanic eruptions etc.

These emissions are of two forms, viz. solid and/or liquid particles (suspended particulate matter) and gaseous emissions. The pollutants have been classified into primary and secondary categories. The primary pollutants like NO_x, SO_x, Oxides of Carbon, Particulate Matter, Methane, Ammonia, etc. are "directly" emitted from manmade and natural activities. The secondary pollutants form when the primary pollutants react with themselves or other components of the atmosphere e.g. Ground Level Ozone, Smog and POPs (Persistent Organic Pollutants).

Effects of air pollution on human health could be broken down into short-term and long term effects. Short term effects include discomfort due to irritation to the nose, throat, eyes or skin and temporary illness such as pneumonia or bronchitis. Long term effect could be lethal and can last for long years. It includes heart diseases, lung cancer and respiratory diseases such as emphysema, asthma etc. It may also cause damage to nerves, brain, kidneys, liver and other organs.

Air Pollution has detrimental effects on environment causing global warming due to low albedo (trapping of heat), eutrophication due to algal bloom, acid rain (water droplets mixes with the pollutants and makes it acidic), Ozone layer depletion (pollutants deplete the ozone layer that protects the earth from harmful UV radiation) etc.

In 2016, it was linked to the deaths of 6.1 million people, according the University of Washington's Institute for Health Metrics and Evaluation. An estimated 92% of the world's population live in areas with dangerous levels of air pollution. It is almost as deadly as tobacco.

Green Issue



Sensor on Street Lights to monitor Air Pollution

Academics at the Chalmers University of Technology in Sweden have developed a small, optical nano-sensor which can be mounted onto ordinary street lights to measure levels of nitrogen dioxide (NO₂). These have been developed in collaboration with the Gothenburg based company Insplorion and the financier Mistra Innovation. It has the capability to detect low concentrations of NO₂ down to parts-per-billion (ppb) and are built on an optical phenomenon called a Plasmon. These are now being tested in various environmental conditions, like on a streetlight, the roof of a shopping mall and along the route of a railway tunnel construction project. With the help of these small, portable sensors, it can become both simpler and cheaper to measure dangerous emissions accurately.

Source: <https://airqualitynews.com/2019/06/13/sensors-on-streetlights-could-monitor-air-pollution/>



Eco tip