

DAILY PT POINTERS

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HEADLINES OF THE DAY

The Hindu-S&T(GSIII)-Page 3

IISc researchers design novel hydrogel to remove microplastics from water

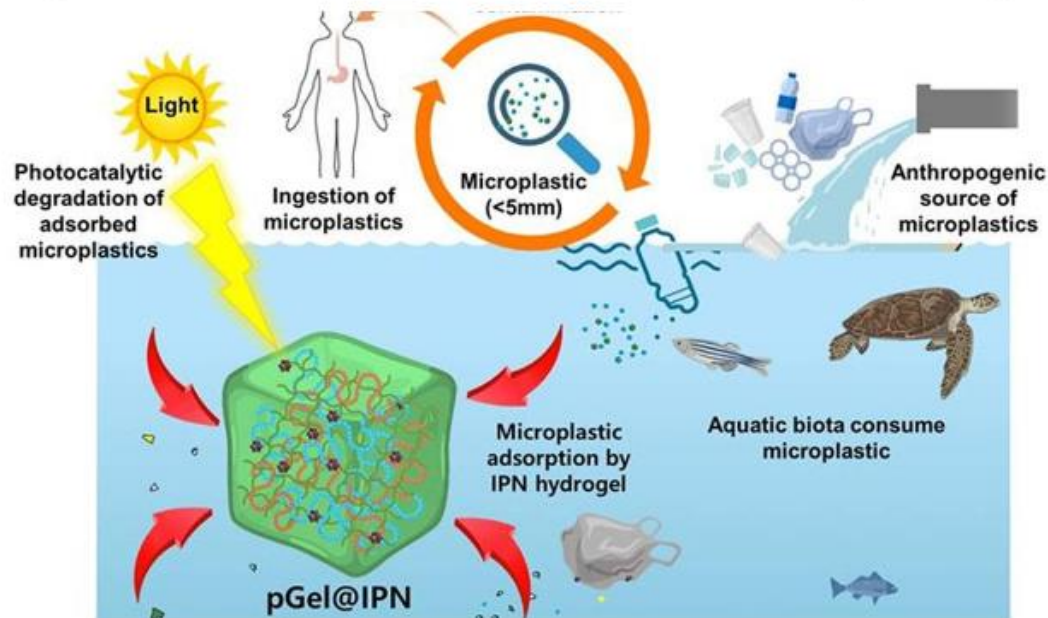
It can bind the contaminants and degrade them using UV light irradiation

April 12, 2024 10:18 pm | Updated 10:19 pm IST - Bengaluru

THE HINDU BUREAU



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Researchers at the Indian Institute of Science (IISc) have designed a sustainable hydrogel to remove microplastics from water.

- , microplastics pose a great threat to human health as these tiny plastic debris can enter our bodies through the water we drink and increase the risk of illnesses.
- They are an environmental hazard and found even in remote areas such as polar ice caps and deep ocean trenches, endangering aquatic and terrestrial lifeforms.

Three-layer polymer

The sustainable hydrogel designed by the researchers has a unique intertwined polymer network that can bind the contaminants and degrade them using UV light irradiation.

HEADLINES OF THE DAY

The Hindu-Environment(GSIII)-Page 10

Third of land conflicts in constituencies where forest rights key issue for election

Jacob Koshy
NEW DELHI

Nearly a third of land-related conflicts are in Lok Sabha constituencies where the implementation of the Forest Rights Act (FRA) is an "important" election issue, says an analysis by Land Conflict Watch, a comprehensive database of land-related conflicts in India.

Out of the 781 conflicts in the database, 264 conflicts were mapped to constituencies where FRA is a key issue. Notably, 117 land conflicts were found to directly affect forest dwelling communities and involve nearly 2.1 lakh hectares of land as well as 6.1 lakh people, the analysis released on Friday noted.

Nearly 44% of the 117 conflicts were triggered



Land issue: Nearly 44% of the 117 conflicts were triggered by conservation and forestry projects. RITU RAJ KONWAR

due to conservation and forestry projects, such as plantations, and involved forest administration. "This suggests that the main adversarial party in such conflicts is the Forest department," said Anmol Gupta, one of the authors of the report.

About 88% of the conflicts involve non-imple-

mentation or violation of key provisions of the FRA. Other major points of conflict are the lack of legal protection over land rights, forced evictions, dispossession of land. About 110 conflicts are in constituencies reserved for Scheduled Tribes and 77 in constituencies reserved for Scheduled Castes.

Maharashtra, Odisha and Madhya Pradesh have the highest number of "core" FRA constituencies, defined as where more than 20% of the resident electorate are eligible to claim rights available under the FRA.

The States with the maximum number of conflicts involving forest rights issues in FRA-critical constituencies are Odisha, Chhattisgarh and the union territory of Jammu and Kashmir. The latest estimates from the Centre say that as of February 2024, 2.45 million titles have been accorded to tribal and forest dwellers. Until the same period, five million claims to title have been received, the Ministry of Tribal Affairs noted, with about 34% of claims having been rejected.

- The FRA, officially known as the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, is a piece of legislation that enables tribal communities and forest-dwelling citizens to claim legal rights over the forest land they have occupied for generations but in many cases, denied a say or authority in its management or free access to forest produce.
- It gives gram sabhas, or village councils, the right to decide on how best their forest land can be used.
- Any transfer of forest land for non-forestry use now requires their consent.
- However the implementation of the FRA has been controversial. While several have been granted titles under its provisions, hundreds of thousands of tribals have seen their claim to titles rejected. The FRA lays down criteria under which tribal inhabitants can claim title to their land.

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The Hindu-S&T(GSIII)-Page 3

'BY THIRD QUARTER OF YEAR, WE WILL ROLL IT OUT IN THE NATIONAL PROGRAMME'

AIIMS launches study to test accuracy of HPV kits for cervical cancer screening

ANKITA UPADHYAY
NEW DELHI, APRIL 12

FOR THE first time, made in India testing kits for the human papilloma virus (HPV), that causes cervical cancer, will be validated across multiple study centres with global samples for accuracy. The project, which has been launched by AIIMS, Delhi, will begin by studying 1,200 samples from France, drawn from a biorepository of WHO's International Agency for Research on Cancer.

According to study investigator, Prof Neerja Bhatla, the project will assess the efficacy of HPV screening test kits as per international quality standards. Once these are validated, they can benefit millions of women in India and other low-income and middle-income countries to get rid of cervical cancer as early as possible at affordable costs.

Currently the available HPV test kits are priced between Rs 1,500 and Rs 3,000 but the indigenous kits will be priced lesser.

The study will be conducted with the support of DBT-BIRAC Grand Challenges India in collaboration with IARC. The testing will be performed at AIIMS, New Delhi, National Institute of Cancer Prevention and Research (NICPR) Noida and ICMR-National Institute For Research In Reproductive and Child Health Mumbai. The lab activities will begin from Monday.

Launching the study on Friday, Dr Bhatla said, "Altogether 127,000 of the 600,000 cases per year are in India. Of the 300,000 deaths across the world, 80,000 deaths are from India... That's why an indigenous HPV test was developed to make it user-friendly, operable and accessible even in the periphery hospitals".

"It's not that simple to vali-

date these testing kits as it involves stringent international standards. The clinical versus analytical validity is something we need to balance," Dr Bhatla said.

The process of testing is similar to a Pap smear test and the sample will be collected by brush or a swab from the cervix.

"In a Pap smear, we stain the sample so that we can read the cytology or the map of cells. This will be a molecular test like that of COVID," said Dr Bhatla.

During an HPV test, a metal or a plastic speculum is inserted into the vagina.

A small sampler, a tiny spatula or a brush, extracts cells from the cervix. A HPV positivity does not mean cancer per se. This flags an infection, which could lead to cancer if allowed to persist.

The study will be conducted over the next three months and Dr Bhatla hoped the results would be credible. After this, quality assurance exchanges will be done as

well. "By the third quarter of the year, we will have good results and we will be rolling it out in the national programme," she said.

"In 2018, WHO announced a cervical cancer elimination strategy and was rolled out in 2020 and India was a signatory. It was decided then that if we could screen and treat 70 per cent women before they turned 40 by 2030 and started, we could control cervical cancer to a large extent," Dr Bhatla said.

Dr Shalini Singh, one of the study investigators, and Director at the National Institute of Cancer Prevention and Research, said,

"We took samples from the IARC biobank which have already been proven to have clinical validity and will get them tested on our indigenous systems. This has helped us cut the time span of the study by one-fifth. Collecting samples takes up to four years, including multiple sites and coordination."

- Human papillomavirus (HPV) is a common sexually transmitted infection. Almost all sexually active people will be infected at some point in their lives, usually without symptoms.
- HPV can affect the skin, genital area and throat.
- HPV usually goes away on its own without treatment. Some HPV infections cause genital warts. Others can cause abnormal cells to develop, which go on to become cancer.
- Cancers from HPV can be prevented with vaccines.

Do you know ?

Cervical cancer develops in a woman's cervix (the entrance to the uterus from the vagina).

Cervical cancer is the fourth most common cancer in women.

HEADLINES OF THE DAY

Indian Express-Culture (GSI)-Page 5

Celebrate a bountiful harvest, onset of spring and remember the formation of the Khalsa Panth

Indians all over the world celebrate the spring harvest festival, Baisakhi, as a day that marks the beginning of the Hindu Solar New Year and the Sikh New Year while commemorating the momentous event of the Khalsa Panth's genesis

▲ MIDST the mild warm yet pleasant ... of the region's cultural landscape. Further

Sikhs, adorned in traditional attire, carry



- Baisakhi is celebrated every year on the first day of the Hindu Month of Vaisakh and the Hindu and Sikh solar new year too.
- On the day of Baisakhi, in the year 1699, the tenth Sikh Guru, Sri Guru Gobind Singh Ji established the Khalsa Panth.
- Baisakhi is also the time when farmers begin harvesting of the Rabi crops.
- It is a significant event for the farmers in the region and observed as a thanksgiving to the Gods and the natural elements

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Indian Express-Geography(GSI)-page 16

VOLCANIC VORTEX RINGS

When does a volcano spout volcanic vortex rings, and what is it about Mount Etna and this activity?

SINCE LAST week, Mount Etna, the largest volcano in Europe, and among the world's most active and iconic volcanoes, has been sending up almost perfect rings of smoke into the air that scientists refer to as volcanic vortex rings.

Mount Etna volcano

Mount Etna, or simply Etna, is a UNESCO World Heritage Site on the east coast of Sicily, the largest island in the Mediterranean Sea, lying just off the toe of the Italian "boot". Etna's summit has five craters, which are responsible for most of its eruptions; there are also "flank" eruptions that occur out of 300-odd vents of varying sizes along the slopes.

Etna's eruptive history can be traced back 500,000 years. Since 1600, at least 60 flank eruptions and many more summit eruptions have taken place. In recent years, summit eruptions have occurred in 2006, 2007-08, on two occasions in 2012, in 2018, and 2021; flank eruptions have taken place in 2001, 2002-03, 2004-05, and 2008-09.



Volcanic vortex rings emerge from the Etna Volcano in Sicily, Italy. AP/PTI

INGV Etna Observatory in Catania, Sicily and a co-author of the 2023 study, told *The New York Times* that volcanic smoke rings were produced in the same way as dolphins blow bubble rings.

"They (dolphins) compress the water in their mouths, using their tongue to

- Mount Etna is the highest Mediterranean island mountain and the most active stratovolcano in the world.
- Its recorded volcanic activity dates back to 1500 B.C. Since then, it has erupted more than 200 times.
- Etna's peak is the highest in Italy south of the Alps, and it is Europe's largest and one of the most active volcanoes.

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Indian Express-Economy (GSIII)-Page 16

What is CDP-SURAKSHA, govt's new digital platform to disburse subsidies to horticulture farmers?

The CDP-SURAKSHA is essentially a digital platform. It will allow an instant disbursal of subsidy to farmers in their bank account by utilising the e-RUPI voucher.



The government has come up with a new platform to disburse subsidies to horticulture farmers under the Cluster Development Programme (CDP) — the Centre's initiative to promote horticulture crops.

- The platform is known as CDP-SURAKSHA.

The move seeks to push the growth of India's horticulture sector, which contributes nearly one-third to the agriculture gross value addition (GVA), making a substantial contribution to the Indian economy.

Do you know ?

The CDP-SURAKSHA is essentially a digital platform. SURAKSHA stands for "System for Unified Resource Allocation, Knowledge, and Secure Horticulture Assistance." The platform will allow an instant disbursal of subsidies to farmers in their bank account by utilising the e-RUPI voucher (*more on this later*) from the National Payments Corporation of India (NPCI).

The CDP-SURAKSHA has features such as database integration with **PM-KISAN**, cloud-based server space from NIC, UIDAI validation, eRUPI integration, local government directory (LGD), content management system, geotagging, and geo-fencing.