

## Roads of polythene! It's possible, says researcher

Researchers at the Banaras Hindu University (BHU) in Uttar Pradesh, claim to have found a new way for disposing of plastic waste, mainly polythene bags, by using them for construction of long-lasting, water-proof roads.

"In our research we observed that polythene bags could immensely enhance the durability of roads," Ram Adhar Singh, a professor with BHU's chemistry department who led the research, said.

Buoyed by the new technique of managing polythene waste, the researchers now plan to get it patented.

"In our research, we used polythene bags after giving them a specific mechanised heat treatment along with coal-tar, pieces of stones and other materials required for constructing roads and got favourable results," said Singh, who is an alumnus of the Indian Institute of Technology (IIT) at Kanpur.



According to the researchers, roads of coal-tar and stones lose their strength due to water-logging. Coal-tar, which is organic in nature, cannot gel effectively with stones that have inorganic properties, resulting in cracks

and potholes when water-logged.

"But when polythene, which is organic in nature, is used after the heat treatment, it forms a layer on the stones. As the inorganic stones get the organic covering they effectively bind

with coal-tar," explained Singh, who has been teaching chemistry for over 25 years.

According to researchers, polythene, coal-tar and small stone pieces are used in a specific proportion. And at a temperature between 120 and 130 degrees Celsius, polythene forms a layer over pieces of stones and prevents the roads from wear and tear in case of water-logging.

The widespread use of polythene is posing a major environmental hazard as it is not bio-degradable. This method now provides a new window of opportunity for proper management of polythene.

Following the unique method, residents of Ashok Puram in Varanasi where Singh lives, have started collecting polythene for making roads in their colony.

The residents have approached Singh to get the road built for them by using the new technique.

## UK firm to provide tech service to Gujarat plant

Britain-based IT and consulting firm Invensys Process Systems (IPS) on February 23 signed a deal with China's Shandong III Electric Power Construction Corporation (SEPCO), which is setting up a 3,300-MW power plant in Gujarat, for providing software solutions.

IPS will implement its Foxboro I/A Series distributed control system (DCS) technology in SEPCO's plant, being

built in Kutch district of Gujarat, a company statement said.

Invensys Process Systems will also provide I/A series automation hardware as well as a range of installation, engineering, training and field services to the plant.

Invensys Process Systems' solutions will be used to control the new plant's boilers, turbines and generators, the statement said.

"IPS has provided complete DCS services to SEPCO for more than 20 generation units, and we are pleased to be their trusted solutions partner as they continue their global expansion," IPS China sales director Siemson Yang said.

The Gujarat power plant is part of the 'Power for All' initiative of the central government. It is one of the largest power plants under construction in India.

## Wife of late Indian chief justice dies in Britain



Sheila Gupta, widow of former acting Chief Justice of India and Maruti Inquiry Commission

head Alak Chandra Gupta, died in Britain at the age of 74.

Sheila Gupta died at the Royal Surrey Hospital in Guildford on February 24 night after a protracted battle with cancer.

A respected and much-loved figure among Bengalis in London, she was a connoisseur of Indian art and culture. Despite failing health, she rarely missed out on an evening of music, dance or poetry. Gupta is survived by her only son, Ananda Gupta, an ophthalmic surgeon at the Royal Surrey Hospital and a well-known practitioner of 'raag-pradhan' (classically-based) Tagore music.

## Britain to invest £150 million in Bihar

The Department for International Development (DFID) of Britain plans to invest up to £150 million in Bihar, a senior official of the British government said in Patna, the capital city of Bihar, on February 15.

"Over the next five years, the DFID is planning to invest up to £150 million in Bihar on strengthening governance,

urban management and health service delivery including nutrition and water and sanitation," DFID India deputy head Chris Chalmers said at a media workshop.

The DFID has also struck a strategic partnership with the World Bank and the Asian Development Bank to make sure that the donor support to the state is provided in a coordinated manner.

"This is an innovative approach to reduce the burden on the government," Chalmers said.

Last June, the DFID signed an agreement with the Bihar government to invest in the state. "The DFID's main aim is to assist and help the Bihar government with the governance reform programme," the British official added.

## A 'helmet gun', courtesy a school dropout

Helmet gun with a wireless trigger? It might sound like sci-fi, but that's exactly what a school dropout in Uttar Pradesh has devised to help commandos in counter-terror operations. And he might even get funding for his innovation — when he finishes high school.

Shyam Chaurasia, a resident of Varanasi district, has designed the helmet gun, which can fire in all directions. "In all, there are 13 barrel guns that are mounted on a helmet to be worn by an NSG (National Security Guard) commando," Chaurasia, 21, said.

Chaurasia's helmet gun can fire in various directions, even at the back, and thus could be quite useful for commandos to eliminate terrorists striking



from behind, said Chaurasia, who gave up studies after he failed in his high school examinations.

The helmet has a 10 barrel gun that

rotates on top, a single barrel gun on the left and double barrel guns on the rear and is operated by a wireless trigger.

"The wireless trigger can also be installed alongside the trigger of the normal gun carried by a commando. The wireless trigger also offers options to fire simultaneously or one by one by the 13 barrel guns mounted on the helmet," said Chaurasia.

He said if defence scientists further develop the helmet gun, it could fire around 70 bullets at a time with a range of around 60 metres.

Developed for around Rs. 700, the helmet gun can fire 13 bullets at a go within a range of 35 metres.

Impressed by the helmet gun, the officials of the Technopreneur Promotion

Programme (TePP) that is governed by the Department of Scientific and Industrial Research (DSIR) have sent a proposal to the department for funding Chaurasia. "Although we have sent the proposal, it would be cleared only when Chaurasia passes Class 10, as matriculation is the minimum eligibility for availing oneself of funds," P. K. Mishra, TePP convenor in Varanasi, said.

"We would assist Chaurasia in completing his Class 10 studies. The helmet gun can be improved further under the technical guidance of scientists," added Mishra. TePP along with its network partners provide technical guidance and mentoring to independent innovators to emerge as entrepreneurs by incubating their ideas.