Glorious Moments of CMRIT

విజేతలకు ట్రోఫీ బహూకరణ

పోటీలకు శ్రీకారం చుడుతూ..

ఉత్సాహభరితంగా స్పర్ధా-18 క్రీడోత్సవాలు

బెంగళూరు, అక్టోబరు 8 (ఆంధ్రజ్యోతి ప్రతినిధి): సిఎంఆర్ ఇన్‌స్టిట్యూట్ ఆఫ్ టెక్నాలజీలో రెండు రోజుల పాటు జరిగిన స్పర్ధ 2018 క్రీడోత్సవం మనంగా ముగిసింది. రాష్ట్రవ్యాప్తంగా 45 కళాశాలల నుంచి బాస్కెట్‌బాల్, ఫుట్‌బాల్, వాలీబాల్, బేబుల్ బిస్సీస్, కబడ్డి జట్లు పాల్గొన్నాయి. ఈ సందర్భంగా ప్రిన్సిపాల్ డా.సంజయ్ జైన్ మాట్లాడుతూ క్రీడలు ప్రజల జీవితంలో పెనవేసుకోవాలని పిలుపునిచ్చారు. క్రీడలు మనలో ఆత్మవిశ్వాసాన్ని గణనీయంగా పెంచుతాయన్నారు. జీవితంలో ఎదురయ్యే సవాళ్ళను ఎదుర్కొనే మానసిక శక్తి క్రీడలతోనే సాధ్యమని ఆయన అభిప్రాయపడ్డారు. ఉప ప్రిన్సిపాల్ డా.వి.నరసింహమూర్తి మాట్లాడుతూ మన దేశంలో ఇటీవలి కాలంలో క్రీడలకు అమితంగా ప్రోత్సాహం లభిస్తున్న కారణంగా కొత్త ప్రతిభలు తెలెత్తికి వస్తున్నాయన్నారు. ఎంఎస్ఆర్‌టి బాస్కెట్ బాల్ క్రీడాకారుడు గౌతమ్ మాట్లాడుతూ యువ ప్రతిభలను వెన్ను తట్టిప్రోత్సహిస్తోన్న సిఎంఆర్‌ఐటి నిర్వహకులకు కృతజ్ఞతలు తెలిపారు. అనంతరం విజేతలకు బహుమతులను ప్రదానం చేశారు. బాస్కెట్‌బాల్ విభాగంలో ఎం.ఎస్.రామయ్య కళాశాల (పురుషులు), న్యూ హారిజన్ కళాశాల (మహిళలు) విజేతలుగా నిలిచారు. ఈ రెండు విభాగాల్లోనూ సిఎంఆర్‌ఐటి జట్లు విద్యార్థులు రన్నరప్‌గా నిలిచారు. ఇక బేబుల్ బిస్సీస్ విభాగంలో బిఎంఎస్ కళాశాల (పురుషులు) సిఎంఆర్ ఐటి (మహిళలు) జట్లు విజేతలుగా నిలిచాయి. ఈ రెండు విభాగాల్లోనూ అలయన్స్ యూనివర్సిటీ జట్లు రన్నరప్‌లుగా నిలిచాయి. ఇక చెస్ పురుషుల విభాగంలో ఎస్.శ్రేయ్, నిహీల్ సింగ్ అదిత్‌లు విజేతలుగా నిలిచారు. మహిళల విభాగంలో ఎస్.సౌమ్య గంగా రెండో స్థానం పొందారు. బోలో విభాగంలో ఆక్స్‌ఫర్డ్ పురుషుల జట్లు విజేతగా నిలిచింది. ప్రో-కబడ్డీ విభాగంలో న్యూ హారిజన్ కళాశాల, వాలీబాల్ విభాగంలో ఎస్ఎంఐటి పురుషుల జట్లు విజేతలుగా నిలిచాయి. ఇందులో ప్రో-కబడ్డీ విభాగంలో ఆక్స్‌ఫర్డ్ జట్లు రన్నరప్‌గా నిలిచింది.

బాస్కెట్‌బాల్ క్రీడాకారిణుల జట్లు

ವಿಜಯವಾಣಿ ನಂ.1

ಬೆಂಡೆಕಾಯಿ ಬೀಜಗಳಿಂದ ನೀರು ಶುದ್ಧೀಕರಣ

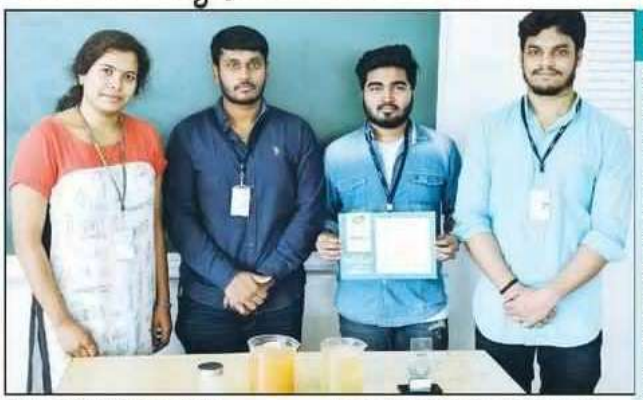
ಸಿಎಂಆರ್‌ಐಟಿ ಕಾಲೇಜು ವಿದ್ಯಾರ್ಥಿಗಳ ತಂಡದಿಂದ ಸಂಶೋಧನೆ

■ ವಿಜಯವಾಣಿ ಸುದ್ದಿಜಾಲ ಬೆಂಗಳೂರು

ಬೆಂಡೆಕಾಯಿ ಬೀಜಗಳನ್ನು ಬಳಸಿಕೊಂಡು ಕಲುಷಿತ ನೀರನ್ನು ಶುದ್ಧ ನೀರಾಗಿ ಪರಿವರ್ತಿಸುವಲ್ಲಿ ಸಿಎಂಆರ್‌ಐಟಿ ಕಾಲೇಜಿನ ವಿದ್ಯಾರ್ಥಿಗಳ ತಂಡ ಯಶಸ್ವಿಯಾಗಿದೆ.

ಮಿತಬೆಲೆಯ, ಪರಿಸರಸ್ನೇಹಿ ಹಾಗೂ ಸಮರ್ಥ ನೈಸರ್ಗಿಕ ಪ್ರಕ್ರಿಯೆ ಮೂಲಕ ನೀರಿನಲ್ಲಿರುವ ಉಷ್ಣತೆಯ ಪ್ರಮಾಣ ತಗ್ಗಿಸಲು ನೈಸರ್ಗಿಕ ಹೆಪ್ಪುಗಟ್ಟುವಿಕೆ ವಿಧಾನಕ್ಕೆ ಬೆಂಡೆಕಾಯಿ ಬೀಜಗಳ ಬಳಕೆ ಮಾಡಲಾಗುತ್ತಿದೆ.

ಕಲುಷಿತ ನೀರನ್ನು ಸಂಸ್ಕರಿಸಿ ಗೃಹ ಬಳಕೆಗೆ ಹಾಗೂ ಕುಡಿಯುವ ನೀರಿಗಾಗಿ ಪರಿವರ್ತಿಸುವ ನಿಟ್ಟಿನಲ್ಲಿ ಹಲವು ವಿಧಾನಗಳು ಬಳಕೆಯಲ್ಲಿವೆ. ಈ ಯತ್ನದಲ್ಲಿ ಸಾಕಷ್ಟು ದುಬಾರಿ ಹಾಗೂ ಸೂಕ್ತವಲ್ಲದ ಹಲವು ಪ್ರಯೋಗಗಳು ಕೂಡ ನಡೆಯುತ್ತಿವೆ. ಇದಕ್ಕೆ ಮೂಲಸೌಕರ್ಯ ಕೊರತೆ ಹಾಗೂ ಅಗತ್ಯ ಬಿಡಿಭಾಗಗಳ ಲಭ್ಯವಿಲ್ಲದಿರುವುದು ಕೂಡ ಕಾರಣ. ಹೆಚ್ಚಿನದಾಗಿ ಈ ನಿಷ್ಪಯೋಜಕ ಮಾದರಿಗಳಿಂದ ಅನಾರೋಗ್ಯದ ಅಪಾಯಗಳು ಎದುರಾಗುತ್ತಿವೆ.



ಈ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ಸಿಎಂಆರ್ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಟೆಕ್ನಾಲಜಿ ವಿದ್ಯಾರ್ಥಿಗಳು ಹೊಸದೊಂದು ವಿಧಾನ ಆವಿಷ್ಕಾರ ಮಾಡಿದ್ದಾರೆ. ಅತ್ಯಂತ ಕಡಿಮೆ ಬೆಲೆಯಲ್ಲಿ ನೈಸರ್ಗಿಕ ಪರಿಹಾರವನ್ನು ಕಂಡುಹಿಡಿದಿದ್ದಾರೆ. ಬೆಂಡೆಕಾಯಿ ಬೀಜ ಬಳಸಿ ಅಶುದ್ಧ ನೀರನ್ನು ಶುದ್ಧೀಕರಿಸುವ ವಿಧಾನ ಪರಿಚಯಿಸಿದ್ದಾರೆ. ಸಿವಿಲ್ ಇಂಜಿನಿಯರಿಂಗ್ ವಿಭಾಗದ ವಿದ್ಯಾರ್ಥಿಗಳಾದ ಶ್ರೀಶೇಶ್, ಶಿವ ಶಾಂಡಿಲ್ಯ ಹಾಗೂ ರೋಹಿತ್ ಸಿವಿಲ್ ವಿಭಾಗದ ಪ್ರೊ.ಕೆ. ಭವ್ಯಾ ಮಾರ್ಗದರ್ಶನದಲ್ಲಿ ಈ ಸಾಧನೆ ಮಾಡಿದ್ದಾರೆ.

ಕಾರ್ಯ ವಿಧಾನ

ನೀರಿನ ಹೆಪ್ಪುಗಟ್ಟುವಿಕೆಗೆ ಈ ವಿಧಾನವನ್ನು ಬಳಸಲಾಗಿದ್ದು, ಇವು ಹೀರಿಕೊಳ್ಳುವ ಕಾರ್ಯವನ್ನು ಮಾಡುತ್ತವೆ. 1.5 ಲೀಟರ್ ಪ್ರಮಾಣದ ಬೆಂಡೆಕಾಯಿ ಬೀಜಗಳು ಮೇಲ್ಪದರದ ನೀರಿನ ಮಾಲಿನ್ಯವನ್ನು ಹೀರಿಕೊಳ್ಳುವ ಕಾರ್ಯ ಮಾಡುತ್ತವೆ. ಮೊದಲು ಬೆಂಡೆಕಾಯಿ ಬೀಜಗಳನ್ನು ತೊಳೆದು ಸಾಮಾನ್ಯ ತಾಪಮಾನದಲ್ಲಿ 24 ಗಂಟೆ ಒಣಗಿಸಿ ಪುಡಿ ಮಾಡಲಾಗುತ್ತದೆ. ಈ ಪುಡಿಯನ್ನು ಬಳಸಿ ಘನೀಭವಿಸಿದ ತ್ಯಾಜ್ಯ ನೀರನ್ನು ಶುದ್ಧೀಕರಿಸಲಾಗುತ್ತದೆ.

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Seized flex banners can be put to everyday use

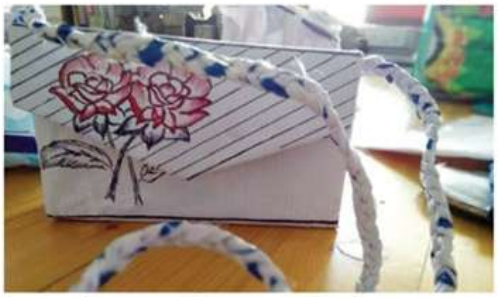
AKNISREE KARTHIK | DC
BENGALURU, AUG. 11

Tonnes of illegal flex banners, seized by BBMP in its recent drive, is currently lying idle and a large quantity has already made their way into the landfills and stormwater drains, thereby polluting the environment.

As they are made up of soft poly vinyl chloride (PVC), these flex banners cannot be burnt due to its chlorine content.

However students of CMRIT have come up with a viable solution for recycling of flex banners, by creating value-added products such as bags, raincoats, covers, ropes, envelopes, chappals etc.

They have a patented mechanism which utilizes polymeric material placed between the flex banner layers and sealed with the help of marginal heat which will form bonds with other polymer wastes.



A women's purse made from recycled flex banner

Prof Phani Kumar Pullela, Faculty of Innovation and Entrepreneur Cell of CMRIT told Deccan Chronicle, "Tonnes of flex banners are seized by the civic body and are lying idle as they do not know have a viable option. CMRIT with the help of Greenhood Technologies Pvt Ltd has got a patented technology which will help recycle these banners and convert them into daily use products, which could be bought at affordable rates. We have products that cost as less as Rs 10."

These products are sturdy, water-resistant and capable of carrying heavy loads. It comes with high tensile strength and can be used in packaging industry, construction, agriculture, Prof Phani said.

He pointed out that nearly two crore package materials despatched from online retailers are turning out to be menace and the flex products can certainly replace them.

He added that this will reduce the burden on environment and help recycle flex banners, which would otherwise end up in as a pollutant.

Apart from saving the environment, Prof Phani felt if recycling flex is taken up commercially it shall create at least 800 jobs for the rural people and help them earn Rs 20,000 a month for a minimum of two years.

"With just one-day orientation program the interested rural candidate can be guided to make the products with the help our technology," he said.

Prof Phani added that they have participated in the state government's 'Elevate 100' (which supports best projects with funding) and was confident that their project will be selected.

Solid waste management expert Ram Prasad insisted that the BBMP should hand over the seized flex banners to the students of CMRIT, who shall convert them into daily usage products and also create jobs.

However, a top BBMP official opined that these products will anyhow reach the landfills after they are used by the people. He maintained that the seized banners are being shredded and supplied to boilers at large industries.

Deccan Chronicle (pg,5)12-08-2018

Students use waste plastic from landfills, aim to reduce pollution

Express Features

While plastic waste is a major nuisance in the city and the world at large, a few engineering students have found a novel use for it. Civil engineering students from CMR Institute of Information Technology have utilised plastic sourced directly from BBMP landfills as a sand-substitution in concrete bricks. The substitution is, however, not total, and students who are part of the project hope that it would go on to help in minimising the problems of plastics in the city to some extent.

Divakar Aradhya R, a team member, says, "We remove a certain percentage of sand in making the bricks and instead use plastic waste. The usage differs from 15 to 30 percent. We have utilised two kinds of plastic — shredded plastic and another in pellet form - that the team got from landfills in Yelahanaka and Nayandahalli."

He further says that while the concrete bricks made of a mixture of plastic and aggregates cannot be used in conventional high load construction, it can, however, be utilised for construction of footpaths or compound walls and in other low load construction projects. "We found out that in bricks with shredded plastics mixture, 45 percent was the optimum level of substitution. In bricks made of pellet plastics the optimum level of plastic was 15 to 13 percent," says Divakar. The team, comprising of four students, including Divakar, made around 65 bricks checking the variation of mixtures.

"One of the biggest advantages of this project is the fact that we can make a mark in two things — one is the cost of construction and another in helping the ecology. Constructions made from concrete bricks will definitely be much cheaper as compared to those made of normal concrete blocks. The biggest aim of the project is to find effective uses of plastic since it cannot be properly disposed off. One way of doing this is shown through our project," he adds.

CMRIT students have developed a concrete using plastic waste. (Below, L-R) Dharshini G M, Chandana D, Charana Gowda A and Divakar Aradhya R — students behind the initiative

"One of the biggest advantages of this project is the fact that we can make a mark in two things — one is the cost of construction and another in helping the ecology.

— Divakar Aradhya R, student

THE INDIAN EXPRESS Tue, 07 August 2018
epaper.newindianexpress.com/c/30998215

CMRIT students win hackathon

The CMR Institute of Technology won the first prize in the international hackathon held at WeWork, Hebbal, recently.

The event was organised by DoraHacks to connect the most talented hackers around the world to solve the greatest problems we ace in different industries and to overcome practical issues in our diversiform society.

The hackathon saw over 300 participants from all over India. Hari Pranav A, of third-semester information science engineering, and Ashwin M S, of third-semester computer science engineering, were adjudged the winner and won a cash prize of Rs 21,700.

ವಿಜಯವಾಣಿ ನಂ 1

ಗುರಿ ತಲುಪುವ ಕಡೆ ಗಮನಹರಿಸಿ

ರಾಜ್ಯಪಾಲ ವಿ.ಆರ್.ವಾಲಾ ಸಲಹೆ » ವಿದ್ಯಾರ್ಥಿಗಳ ಪ್ರಾಜೆಕ್ಟ್‌ಗಳ ಪ್ರದರ್ಶನ

■ ವಿಜಯವಾಣಿ ಸುದ್ದಿಜಾಲ ಬೆಂಗಳೂರು

ವಿದ್ಯಾರ್ಥಿಗಳು ವ್ಯಸನ ಮತ್ತು ವ್ಯಾಪಾರ್‌ನಿಂದ ದೂರ ಉಳಿಯಕೊಂಡು ತಮ್ಮ ಗುರಿ ತಲುಪುವ ಕಡೆ ಹೆಚ್ಚಿನ ಗಮನ ನೀಡಬೇಕೆಂದು ಎಂದು ರಾಜ್ಯಪಾಲ ವಿ.ಆರ್.ವಾಲಾ ಸಲಹೆ ನೀಡಿದರು.

» ವಿದೇಶಿ ವಸ್ತುಗಳ ವ್ಯಾಮೋಹ ಬಿಟ್ಟಾಗ ನಮ್ಮ ದೇಶದ ಆರ್ಥಿಕ ಅಭಿವೃದ್ಧಿ ಸಾಧ್ಯ

ಅಖಿಲ ಭಾರತೀಯ ವಿದ್ಯಾರ್ಥಿ ಪರಿಷತ್ತು (ಎಬಿವಿಪಿ) ದಯಾನಂದ ಸಾಗರ್ ಇಂಜಿನಿಯರಿಂಗ್ ಕಾಲೇಜಿನಲ್ಲಿ ಆಯೋಜಿರುವ ಮೂರು ದಿನಗಳ ರಾಜ್ಯ ಮಟ್ಟದ ಇಂಜಿನಿಯರಿಂಗ್ ವಿದ್ಯಾರ್ಥಿಗಳ ಪ್ರಾಜೆಕ್ಟ್‌ಗಳ ಪ್ರದರ್ಶನ ಮತ್ತು ಸ್ಪರ್ಧೆ (ಸೃಷ್ಟಿ)ಗೆ ಚಾಲನೆ ನೀಡಿದ ಅವರು, ವಿಜ್ಞಾನ ಮತ್ತು ತಂತ್ರಜ್ಞಾನ ಅಭಿವೃದ್ಧಿಯಾದರೆ ದೇಶವು ಅಭಿವೃದ್ಧಿಯಾಗಲಿದೆ. ನಮ್ಮಲ್ಲಿರುವ ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಹೊಸ ಅವಿಷ್ಕಾರ ಮಾಡುವ ಸಾಮರ್ಥ್ಯ ಇದೆ.

ನಾವು ಇದಕ್ಕೆ ಪ್ರೋತ್ಸಾಹ ನೀಡಬೇಕು ಅಷ್ಟೇ. ಕಾಲೇಜು ಜೀವನ ಅತಿ ಅಮೂಲ್ಯವಾಗಿದೆ. ಈ ಸಮಯದಲ್ಲಿ ನಿಮ್ಮ ಗಮನವೆಲ್ಲ ಗುರಿ ಮುಟ್ಟುವ ಕಡೆ ಇರಬೇಕೇ ಹೊರತು, ಮಾದಕ ವಸ್ತು ಮತ್ತು ಫ್ಯಾಷನ್ ಕಡೆ ಅಲ್ಲ ಎಂದು ಹೇಳಿದರು.

ಅಂತಾರಾಷ್ಟ್ರೀಯ ಮಟ್ಟದ ಕಂಪನಿ ಗಳಲ್ಲಿ ನಮ್ಮ ಭಾರತೀಯರು ಉತ್ತಮ ಹುದ್ದೆಗಳನ್ನು ಅಲಂಕರಿಸಿದ್ದಾರೆ. ನಮ್ಮ ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಧಿಸುವ ಛಲ ಇದೆ. ಇವರ ಅವಿಷ್ಕಾರಗಳಿಗೆ ಪಾಲಕರು ಮತ್ತು ಉಪನ್ಯಾಸಕರು ಪ್ರೋತ್ಸಾಹ ನೀಡಬೇಕು. ವಿದ್ಯಾರ್ಥಿಗಳು ದೇಶಕ್ಕೆ ಕೊಡುಗೆ ನೀಡುವ ಕುರಿತು ಸಹ ಅಲೋಚಿಸಬೇಕಿದೆ. ವಿದೇಶಿ ವಸ್ತುಗಳ ಮೇಲಿನ ವ್ಯಾಮೋಹ ಬಿಟ್ಟಾಗ ಮಾತ್ರ ನಮ್ಮ ಭಾರತ ಮತ್ತಷ್ಟು ಆರ್ಥಿಕವಾಗಿ ಅಭಿವೃದ್ಧಿ ಸಾಧಿಸಲು ಸಾಧ್ಯವಾಗುತ್ತದೆ ಎಂದರು.

ಅಖಿಲ ಭಾರತೀಯ ತಾಂತ್ರಿಕ ಶಿಕ್ಷಣ ಪರಿಷತ್ತಿನ ಉಪಾಧ್ಯಕ್ಷ ಡಾ.ಎಂ.ಪಿ. ಪೂನಿಯಾ, ದೇಶದಲ್ಲಿ 37 ಲಕ್ಷ ಇಂಜಿನಿಯರಿಂಗ್ ಸೀಟುಗಳು ಲಭ್ಯವಿದ್ದು, 20 ಲಕ್ಷ ವಿದ್ಯಾರ್ಥಿಗಳು ಪ್ರತಿ ವರ್ಷ ಪ್ರವೇಶ ಪಡೆಯುತ್ತಾರೆ. 13 ಲಕ್ಷ ವಿದ್ಯಾರ್ಥಿಗಳು ಉತ್ತೀರ್ಣರಾಗಲಿದ್ದು, ಈ ಪೈಕಿ ಕ್ಯಾಂಪಸ್ ಸಂದರ್ಶನದ ಮೂಲಕ ಕೆಲಸ ಗಿಟ್ಟಿಸಿಕೊಳ್ಳುವವರ ಸಂಖ್ಯೆ ಮಾತ್ರ ಕೇವಲ 7 ಲಕ್ಷ. ಹೀಗಾಗಿ ಇಂಜಿನಿಯರಿಂಗ್ ಕಾಲೇಜು ಗಳು ಕೈಗಾರಿಕೋದ್ಯಮಿಗಳೊಂದಿಗೆ ಬರ್ಬಿಸಿ ಅವರ ಅಗತ್ಯತೆಗೆ ತಕ್ಕಂತೆ ಪಠ್ಯಪುಸ್ತಕ ರೂಪಿಸುವ ಅಗತ್ಯವಿದೆ ಎಂದರು.

ದಯಾನಂದ ಸಾಗರ್ ಶಿಕ್ಷಣ ಸಂಸ್ಥೆಗಳ ಕಾರ್ಯದರ್ಶಿ ಗಾಳಿಸ್ವಾಮಿ, ದಯಾನಂದ ಸಾಗರ್ ಇಂಜಿನಿಯರಿಂಗ್ ಕಾಲೇಜಿನ ಕುಲಾಧಿಪತಿ ಆರ್. ಜನಾರ್ದನ, ಪ್ರಾಂಶುಪಾಲ ಡಾ. ಸಿ.ಪಿ ಎಸ್. ಪ್ರಕಾಶ್, ಸೃಷ್ಟಿಯ ಸಂಚಾಲಕ ಗಿರೀಶ್ ಬಡಿಗೇರ್, ಕೆ.ಗುರುಪ್ರಸಾದ್, ಎಸ್. ಅಭಿಲಾಷ್ ಮತ್ತಿತರರಿದ್ದರು.

ಅಖಿಲ ಭಾರತೀಯ ವಿದ್ಯಾರ್ಥಿ ಪರಿಷತ್ತು ದಯಾನಂದ ಸಾಗರ್ ಇಂಜಿನಿಯರಿಂಗ್ ಕಾಲೇಜಿನಲ್ಲಿ ಆಯೋಜಿರುವ ಮೂರು ದಿನಗಳ ರಾಜ್ಯ ಮಟ್ಟದ ಇಂಜಿನಿಯರಿಂಗ್ ವಿದ್ಯಾರ್ಥಿಗಳ ಪ್ರಾಜೆಕ್ಟ್‌ಗಳ ಪ್ರದರ್ಶನ ಮತ್ತು ಸ್ಪರ್ಧೆಗೆ ರಾಜ್ಯಪಾಲ ವಿ.ಆರ್. ವಾಲಾ ಚಾಲನೆ ನೀಡಿದರು. ಕುಲಾಧಿಪತಿ ಆರ್. ಜನಾರ್ದನ, ಪ್ರಾಂಶುಪಾಲ ಡಾ. ಸಿಪಿಎಸ್. ಪ್ರಕಾಶ್ ಇದ್ದರು.

ಛಾವಣಿಯಲ್ಲೇ ಸೋಲಾರ್

ಈ ಸೃಷ್ಟಿ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಒಟ್ಟಾರೆ 1,110 ಪ್ರಾಜೆಕ್ಟ್‌ಗಳನ್ನು ಬಂದಿದ್ದವು. ಈ ಪೈಕಿ 510 ಪ್ರಾಜೆಕ್ಟ್ ಗಳನ್ನು ಮಾತ್ರ ಆಯ್ಕೆ ಮಾಡಲಾಗಿದೆ. ಸಿಎಂಆರ್‌ಐಟಿ ವಿದ್ಯಾರ್ಥಿ ಶ್ಯಾಮ್ ಸೋಲಾರ್ ಬಳಕೆ ಕುರಿತು ರೂಪಿಸಿರುವ ಪ್ರಾಜೆಕ್ಟ್ ಹೆಚ್ಚಿನ ಗಮನ ಸೆಳೆದಿದೆ. ಮೇಲ್ಛಾವಣಿಯ ಹೊದಿಕೆಯಲ್ಲೇ ಸೋಲಾರ್ ಪ್ಯಾನಲ್‌ಗಳನ್ನು ಅಳವಡಿಸಿ ವಿದ್ಯುತ್ ಉತ್ಪಾದನೆ ಮಾಡುವ ವಿಧಾನ ತೋರಿಸಿಕೊಟ್ಟಿದ್ದಾರೆ. ಇದು ಮಾತ್ರವಲ್ಲದೆ, ಪಾದಚಾರಿ ಮಾರ್ಗದಲ್ಲಿ ಅಳವಡಿಸುವ ಸಿಮೆಂಟ್ ಕಲ್ಲುಗಳ ಮಧ್ಯೆ ಕೂಡ ಸೋಲಾರ್ ಪ್ಯಾನಲ್ ಅಳವಡಿಸಿದ್ದಾರೆ. ಇನ್ನೊಂದು ವಿಶೇಷ ಎಂದರೆ ಸೋಲಾರ್ ಹೆಲ್ಮಟ್ ರೂಪಿಸಿದ್ದು, ಇದರಿಂದ ಉತ್ಪತ್ತಿಯಾಗುವ ವಿದ್ಯುತ್ ಅನ್ನು ಆ ಮೂಲಕ ಅಮ್ಲಜನಕ ಶುದ್ಧೀಕರಣದ ಮಾಸ್ಕ್‌ಕೆ ಸಂಪರ್ಕ ಕಲ್ಪಿಸಿದ್ದಾರೆ. ಪರಿಸರ ಮಾಲಿನ್ಯಗೊಳ್ಳುತ್ತಿರುವ ಕಾಲದಲ್ಲಿ ಈ ಮಾಸ್ಕ್ ಹಾಕಿಕೊಂಡು ಉತ್ತಮ ಗಾಳಿ ಸೇವನೆ ಮಾಡಬಹುದು ಎಂಬುದು ಶ್ಯಾಮ್‌ನ ಪ್ರಯತ್ನ.

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ಸಿಎಂಆರ್ ಕಾಲೇಜಿನಲ್ಲಿ ಜನಮನ ಸೆಳೆದ ರೋಬೋಟ್‌ಗಳು

ಬೆಂಗಳೂರು, ಫೆ 6- ನಗರದ ಸಿಎಂಆರ್ ತಾಂತ್ರಿಕ ಮಹಾವಿದ್ಯಾಲಯದಲ್ಲಿ ಆಯೋಜಿಸಲಾಗಿದ್ದ ವಿದ್ಯಾರ್ಥಿ-ತಂತ್ರಜ್ಞಾನ ಮತ್ತು ಪ್ರದರ್ಶನ ವೈವಿಧ್ಯಮಯ ಕಾರ್ಯಗಳನ್ನು ನಿರ್ವಹಿಸುವ ರೋಬೋಟ್‌ಗಳು ಜನಮನ ಸೆಳೆದವು.

ರಕ್ಷಣಾಪ್ರಿಯ ಆಡಿ-ತಡೆಗಳನ್ನು ನಿವಾರಿಸುವುದು, ಕೈಗಾರಿಕೆಗಳಲ್ಲಿ ಸಾಮಗ್ರಿಗಳನ್ನು ಕೊಂಡೊಯ್ಯುವ ಮೊಬೈಲ್ ನಿಯಂತ್ರಿತ ರೋಬೋಟ್‌ಗಳು ಹೆಚ್ಚು ಜನರನ್ನು ಆಕರ್ಷಿಸಿದವು.

ಕಂಪ್ಯೂಟರ್ ಎಂಜಿನಿಯರಿಂಗ್ ವಿದ್ಯಾರ್ಥಿಗಳಾದ ಸಾಯಿನ್, ಆರೀಫ್, ರೋಣಕ್ ಮತ್ತು ಇಂಯಜ್‌ಗಾದ ಈ ರೋಬೋಟ್‌ಗಳು ಮುಂದಿನ ಪೀಳಿಗೆಯ ಆಟೊಮ್ಯಾಟಿಕ್ ವಾಹನಗಳ ನಿರ್ಮಾಣದಲ್ಲಿ ಸಹಕಾರಿಯಾಗಲಿವೆ ಎಂದು ಅಭಿಪ್ರಾಯಪಟ್ಟರು.

ಸೋಲಾರ್ ಚಾಲಿತ ವಾಹನವನ್ನು ಪ್ರದರ್ಶಿಸಿದ ಪ್ರಾಣ್, ಈ ವಾಹನ ರಸ್ತೆಯಲ್ಲಿನ ಕಾಮನನ್ನು ಪೀಗಳಿಂದು ಹೆಚ್ಚಿನ ದಕ್ಷತೆಯಿಂದ ಕಾರ್ಯನಿರ್ವಹಿಸುತ್ತದೆ ಎಂದು ವಿವರಿಸಿದರು.

ಕಾಲೇಜು ರೊಬೆಕ್ಟ್ ಕ್ಲಬ್‌ಗಳಲ್ಲಿ ಆವಿಷ್ಕಾರಗಳನ್ನು ತರೆಯುವ ತಂತ್ರಜ್ಞಾನವನ್ನು ಎಲೆಕ್ಟ್ರಾನಿಕ್ಸ್ ಎಂಜಿನಿಯರಿಂಗ್ ವಿದ್ಯಾರ್ಥಿ ಆನಂದ್ ತೋರಿಸಿದರು.

ಕಾಲೇಜು ವಿದ್ಯಾರ್ಥಿಗಳು, ಶಿಕ್ಷಕರು, ಸಾರ್ವಜನಿಕರು ಆಕ್ಷಣಾತೊಡನೆ ಸಮಾಲೋಚಿಸಲು ಯೋಜನೆಗಳ ಬಗ್ಗೆ ಚರ್ಚಿಸಿ ಉತ್ತೇಜನ ನೀಡಿದರು. ಪ್ರಾಂಶುಪಾಲ ಡಾ.ಸಂಜಯ್ ಜೈನ್, ಉಪಾಧ್ಯಾಯರಾದ ಡಾ ಪಿ. ನರಸಿಂಹಮೂರ್ತಿ ಪ್ರದರ್ಶನ ಉದ್ಯುಕ್ತ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಉತ್ತೇಜನ ನೀಡಿದರು.

ಸಿಮೆಂಟ್ ರಹಿತ ಕಾಂಕ್ರೀಟ್ ಇಟ್ಟಿಗೆ

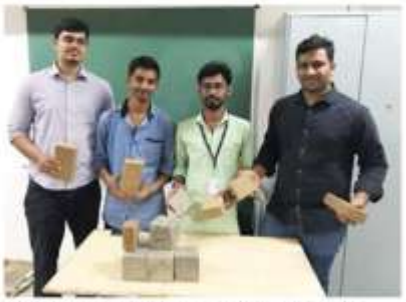
ಸಿಎಂಆರ್ ಇಂಜಿನಿಯರಿಂಗ್ ಮತ್ತು ತಂತ್ರಜ್ಞಾನ ಕಾಲೇಜಿನ ವಿದ್ಯಾರ್ಥಿಗಳು ಸಿಮೆಂಟ್ ಮುಕ್ತ ಕಾಂಕ್ರೀಟ್ ಇಟ್ಟಿಗೆಗಳನ್ನು ಜಿಯೋಪಾಲಿಮರ್ ಟೆಕ್ನಾಲಜಿ ಬಳಸಿ ತಯಾರಿಸಿದ್ದಾರೆ.

ಸಿಎಂಆರ್ ಇಂಜಿನಿಯರಿಂಗ್ ಮತ್ತು ತಂತ್ರಜ್ಞಾನ ಕಾಲೇಜಿನ ವಿದ್ಯಾರ್ಥಿಗಳು ಸಿಮೆಂಟ್ ಮುಕ್ತ ಕಾಂಕ್ರೀಟ್ ಇಟ್ಟಿಗೆಗಳನ್ನು ಜಿಯೋಪಾಲಿಮರ್ ಟೆಕ್ನಾಲಜಿ ಬಳಸಿ ತಯಾರಿಸಿದ್ದಾರೆ.

ಸಂಯುಕ್ತ ಕರ್ನಾಟಕ Tue, 06 March 2018
epaper.samyukthakarnataka.com//c

Silt from lakes to make environment-friendly bricks

RALPH ALEX ARAKAL | DC
BENGALURU, FEB. 19



CMRIT Team - Team CO3 Structural Systems with products developed as part of their innovation

A group of young scientists and engineers in the city have come up with an innovative product -concrete bricks made from lake sludge which are totally environment-friendly unlike cement-based ones. The cost of each brick can be reduced to almost half of their conventional counterparts and they are one and a half times stronger as well, claims Mohsin Ali Khan, a civil engineer who just graduated from CMRIT and has been instrumental in the innovation along with four of his friends. The team adds that the sludge can also be used as a good fertiliser.

Research under the guidance of Prof. Phani Kumar Pullela helped the team file three patents - for sewage sludge bricks, ornamental bricks and cementless structural-element pave bricks. Using geopolymer technology, the team has been working and experimenting since 2016 as part of their final project at college. They have also registered a startup named CO3 Structural Systems which has been recognised by the Department of Industrial Policy and Promotion (DIPP), Government of India.

Speaking to DC, Prof Pullela, head of innovation and entrepreneurship cell at CMRIT said that the team was inspired by design thinking workshops held at the institute which enabled them to come up with innovative solutions. "The team identified the problem at Bellandur and collected silt from the lake which was treated and used for their experiments. As research progressed, their hard work and dedication helped them find patentable ideas. They have developed something dangerous for nature into something that is environment-friendly and that needs to be appreciated," he remarked.

The company is now working on another project related to utilising mine dust for innovative solutions and is hopeful of setting up a brick factory soon near to the city. The team of friends have also decided to pursue higher education in due course, in turns. For instance, when Gowtham Reddy B, one among them, returns on completion of his course at Coventry University, Mohsin has already made plans to fly to a varsity to further his education. The other members of the team include Sharath Kumara Devraju, Vinay Kumar Mansali and Mulla Parvez Ahamed and mentors Prof. Karthik N M (Civil Engineering Department) and Prof. Srinivas Reddy (Mechanical Engineering Department). "The company has signed an MoU with CMRIT and CMR University to help us further our research using the laboratory facilities and mentoring from the subject experts," sums up Mohsin.

ಕಷ್ಟದಲ್ಲಿರುವವರಿಗೆ ನೆರವಾಗಿ

ಸಚಿವ ರೋಷನ್ ಬೇಗ್ ಕರೆ । ಸಿಎಂಆರ್‌ಐಟಿ ಬೆಳ್ಳಿ ಮಹೋತ್ಸವ

ಪ್ರತಿಭಾವಂತ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಪ್ರೋತ್ಸಾಹ ಧನ ವಿತರಣೆ

ಎಂಬಿಎ ಹಾಗೂ ಎಂಸಿಎ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಸಚಿವ ರೋಷನ್ ಬೇಗ್ ಪ್ರೋತ್ಸಾಹ ಧನ ವಿತರಿಸಿದರು.

ಇದು ಬೆಂಗ್ಳೂರು ಸ್ಟೂಡೆಂಟ್ಸ್ ಪ್ರಾಜೆಕ್ಟ್

ರೈಲ್ವೆ ಕ್ರಾಸಿಂಗ್‌ಗಳಲ್ಲಿ ಅಪಘಾತವಾಗದಂತೆ ಎಚ್ಚರ ಮುನ್ಸೂಚನೆ ಕ್ರಮಗಳನ್ನು ಕೈಗೊಂಡರೂ ಕಡಿಮೆಯೇ. ಎಷ್ಟೋ ಸಲ ಕಣ್ತಪ್ಪಿನಿಂದ ಅಪಘಾತವಾಗುವುದಿದೆ. ಇದಕ್ಕೆ ಪರಿಹಾರವನ್ನು ಕಂಡು ಹಿಡಿಯುವ ಉದ್ದೇಶದಿಂದ ಇದೇ ವಿಷಯವನ್ನೇ ಆರಿಸಿಕೊಂಡ ಬೆಂಗಳೂರಿನ ಎಂಜಿನಿಯರಿಂಗ್ ವಿದ್ಯಾರ್ಥಿಗಳು ಒಂದು ಪ್ರಾಜೆಕ್ಟ್ ಮಾಡಿದ್ದಾರೆ.

ನಗರದ ಸಿ.ಎಂ.ಆರ್ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಟೆಕ್ನಾಲಜಿಯ ಅಧ್ಯಾಪಕರಾದ ಡಾ.ಸುಧೀರ್ ರೆಡ್ಡಿ, ಪ್ರೊ.ಕರ್ಮಿಳಾ ಕೆ.ಪಿ. ಪ್ರೊ.ರಾಮಲ್ ಸ್ಯಾಮಗೆತರ್ ಅವರ ಮಾರ್ಗದರ್ಶನದಲ್ಲಿ ಮಾಳವಿಕಾ ವಿನಯ್, ಅಶಾನ್ ಆಧಿನನ್, ಅದಿತ್ಯ ನಿರಂಜನ್, ಮಿಶಾ ಪಿ. ರೇನಿ ಜೈನ್, ಮಧುಸೂದನ್ ಕೆ.ಎಂ. ಈ ಪ್ರಾಜೆಕ್ಟ್‌ಅನ್ನು ಯಶಸ್ವಿಯಾಗಿ ಮುಗಿಸಿದ್ದಲ್ಲದೇ ಅಲ್ಲದೆ ಹಲವಾರು ಪ್ರಶಸ್ತಿಗಳನ್ನು ಗೆದ್ದುಕೊಂಡಿದ್ದಾರೆ. ಎಐಸಿಟಿಯವರು ಸಂಘಟಿಸಿದ್ದ 'ಸೃಷ್ಟಿ 2017', ರಾಜ್ಯಮಟ್ಟದ ತಾಂತ್ರಿಕ ಪ್ರದರ್ಶನ ಮತ್ತು ಸ್ಪರ್ಧೆಯಲ್ಲಿ ಈ ಪ್ರಾಜೆಕ್ಟ್ ಮೊದಲ ಸ್ಥಾನ ಪಡೆದಿದೆ. ಅಷ್ಟೇ ಅಲ್ಲ ಏಷ್ಯದ ಅತಿದೊಡ್ಡ ಪ್ರಾಕಥಾನ್ ಸ್ಪರ್ಧೆಗೆ ಈ ಪ್ರಾಜೆಕ್ಟ್ ಆಯ್ಕೆಯಾಗಿದೆ.

ಬೆಂಗಳೂರಿನ ವಿದ್ಯಾರ್ಥಿಗಳ ಸಾಧನೆಯಲ್ಲು ಗಮನಿಸಿರುವ ಭಾರತೀಯ ರೈಲ್ವೆ ನಿಗಮ ಈ ಪ್ರಾಜೆಕ್ಟ್‌ಅನ್ನು ಅನುಷ್ಠಾನಕ್ಕೆ ತರುವ ಬಗ್ಗೆ ಪರಾಮರ್ಶೆ ನಡೆಸಲಿದೆ ಎನ್ನುವುದು ರಾಜ್ಯಕ್ಕೆ ಸಂದ ಹೆಮ್ಮೆ.

CMRIT women claim title

The women's badminton team of the CMR Institute of Technology defeated MSRIT 2-1 to clinch the VTU Bangalore Central Zone Badminton Tournament held on Sept 4-5 at the BMS College of Engineering. The men's team of CMRIT finished as runners-up after losing 0-3 to BMS. Both teams qualified for the VTU Inter-Zone Tournament which will be held on Sept 8-9 in Shivamogga.

RESULTS (All finals)

Girls: Singles: CMRIT lost 15-21 17-21; Doubles: CMRIT won 21-12 21-15; Second Singles: CMRIT won 21-12 21-13

Boys: Single: CMRIT lost 7-21 12-21; Second singles: CMRIT lost 15-21 18-21; Doubles: CMRIT lost 17-21 18-21

CMRIT women badminton players pose with the winners' trophy

Bengalurean's research could right the 'spine' of civil engineering

Express Features

Construction of your homes and offices require welding of metal, such as iron and steel, but the method widely used for this is not safe. It can cause cracks in the metal skeleton leading to its cracking, and thus disastrous consequences.

But a Bengalurean researcher has received a grant that can right this, and cheaply too. It could mean a seachange in civil engineering. Dr. Bijayani Panda, Associate Professor, Department of Mechanical Engineering CMR Institute of Technology, is conducting a three-year study on best practices to follow while welding metals coated with zinc. She has received a grant of Rs 18.47 lakh, recently, from the Young Scientist scheme of the Department of Science and Technology, Government of India, to further her research.

This is why the study matters. Any construction work requires the welding of metals such as iron and steel. Using stainless steel in construction definitely helps as a result of its anti-corrosion properties, however, due to its high cost, it cannot be used it at all times.

Hence galvanisation or the process of coating steel or iron with zinc, is a common practice in construction. Zinc is cheap and is regularly used to prevent the underlying metals from rusting. The most common method of galvanisation is to dip the metal in molten zinc.

A major challenge with zinc is its low melting point. Not addressing it could cause the coating to melt and weaken the metal structure.

Panda explains, zinc melts at a temperature of about 482°C and vaporises at about 906°C. Steel on the other hand melts at around 1510°C.

The welding arc temperature (highest temperature during welding) is 8,300 to 11,090°C, leading to the zinc near the weld to vaporise.

Some of the molten zince can also penetrate the steel surface and result in cracking. A process called liquid metal embrittlement (LME). Some of the typical cleaning procedures used on-site to remove the galvanized layer before welding are power wire brushing and grinding. However, it has been found that these methods are not completely effective in preventing zince contamination during welding. These cracks can lead to failure of structural components since they remain undetected at times.

"Although this is a major risk, it is surprising that there are very few studies on LME and on finding a solution to this problem. This is one of the main reasons I decided to take up this study," she says

One such typical case study was reported way back in 1974 at the cyclohexane plant at Flixborough, England that exploded, causing widespread destruction. The stainless steel pipes which were recovered after the fire had suffered extensive cracking. On analysis, it was found that zinc from galvanised walkways, stairways and girders had transported to the surface of the stainless steel pipe, either as molten droplets or as vapour, and had resulted in liquid metal embrittlement of the pipes, says Dr Bijayani.

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ಕಾವಲುರಹಿತ ರೈಲ್ವೆ ಕ್ರಾಸಿಂಗ್: ದುರಂತ ತಡೆಗೆ ತಂತ್ರಜ್ಞಾನ

ಬೆಂಗಳೂರು: ಕಾವಲುಗಾರರಹಿತ ರೈಲ್ವೆ ಕ್ರಾಸಿಂಗ್‌ನಿಂದ ಸಂಭವಿಸುವ ಅಪಾಯ ತಪ್ಪಿಸಲು ಸಿಎಂಆರ್ ತಾಂತ್ರಿಕ ಕಾಲೇಜಿನ ವಿದ್ಯಾರ್ಥಿಗಳು ತಂತ್ರಜ್ಞಾನ ಅಭಿವೃದ್ಧಿಪಡಿಸಿದ್ದಾರೆ.

ಇಂಟರ್‌ನೆಟ್ ಆಫ್ ಥಿಂಗ್ಸ್ (ಐಒಟಿ) ಆಧರಿತವಾದ ಸಾಧನ ಮೂರು ಹಂತಗಳಲ್ಲಿ ಸುರಕ್ಷತೆಯ ಎಚ್ಚರಿಕೆಗಳನ್ನು ನೀಡುತ್ತದೆ. ಮೊದಲು ಅಪ್ಟಿಕರ್ ಸೆನ್ಸರ್ ಸೂಚನೆಯಿಂದ ಗೇಟು ಮುಚ್ಚಿಕೊಳ್ಳುತ್ತದೆ. ನಂತರದ ಹಂತದಲ್ಲಿ ಒತ್ತಡ ಆಧರಿಸಿ ರೇಡಿಯೊ ತರಂಗಗಳ ಮೂಲಕ ಕೆಂಪು ದೀಪ ಬೆಳಗುವ ಹಾಗೂ ಗಂಟೆ ಬಾರಿಸುವ ಮೂಲಕ ಎಚ್ಚರಿಸಲಾಗುತ್ತದೆ. 2 ಕಿ.ಮೀ ದೂರದವರೆಗೆ ಸೆನ್ಸರ್ ಸಿಗುತ್ತದೆ.

ಈ ಮಾದರಿಯನ್ನು ಇನ್ನಷ್ಟು ಅಭಿವೃದ್ಧಿ ಪಡಿಸಲು ಕೇಂದ್ರ ರೈಲ್ವೆ ಸಚಿವಾಲಯ ಅಯ್ಕೆ ಮಾಡಿಕೊಂಡಿದೆ. ಎಬಿವಿಪಿ ಮೇನಲ್ಲಿ ಆಯೋಜಿಸಿದ್ದ 'ಸೃಷ್ಟಿ-2017'ರಲ್ಲಿ ಈ ತಂಡ ಭಾಗವಹಿಸಿ ಮೊದಲ ಸ್ಥಾನ ಪಡೆದಿತ್ತು. ಅಲ್ಲದೆ, ವಿಶ್ವದ ಅತಿದೊಡ್ಡ ಸ್ಮಾರ್ಟ್ ಇಂಡಿಯಾ ಹ್ಯಾಕಥಾನ್‌ಗೆ ಆಯ್ಕೆಯಾಗಿದೆ.

ಈ ತಂಡದಲ್ಲಿ ಮಾಳವಿಕಾ ವಿನಯ್, ಇಶಾನ್ ಅಧಿನವ್, ಅದಿತ್ಯ ನಿರಂಜನ್, ಪಿ. ಮಿಶಾ, ರೇನಿ ಜೈನ್, ಕೆ.ಎಂ. ಮಧುಸೂದನ್ ಅವರು ಇದ್ದಾರೆ. ಡಾ.ಸುಧೀರ್ ರೌಟ್ರೆ, ಪ್ರೊ. ಕೆ.ಪಿ. ಶರ್ಮಿಳಾ, ಪ್ರೊ.ರಾಹುಲ್ ಸ್ವಾಮಗೌಡರ್ ಮಾರ್ಗದರ್ಶನ ನೀಡಿದ್ದಾರೆ.

ವಿಜಯವಾಣಿ

ಸಿಎಂಆರ್ ಪ್ರಾಧ್ಯಾಪಕಿಗೆ ಗೌರವ

ಬೆಂಗಳೂರು: ಸಿಎಂಆರ್ ತಾಂತ್ರಿಕ ಕಾಲೇಜಿನ ಗೌರವಾರ್ಪಣೆ. ಎಂಬೆಡೆಡ್ ಬೇಸ್ಡ್ ಮೆಟರ್ ಆಕ್ಸೆಸ್ ಕಾಯಿದೆ ವಿಷಯದ ಸಹ ಪ್ರಾಧ್ಯಾಪಕಿ ಚೈತನ್ಯಲಕ್ಷ್ಮಿ ಇಖಿಂಂ ವಿಷಯ ಪದಕ್ಕೆ ಭಾಜನರಾಗಿದ್ದಾರೆ. ನ್ಯಾನೋಟೆಕ್ನಲ್ ಸೊಲಿಡ್ಸ್‌ಟೇಟ್ ಗ್ಲಾಸ್ಟಿಕ್ ಏರಿಯೋಸ್ಟ್ ಫಾರ್ ಆಪ್ಟಿರೆಸಿಯೋಟಿಕ್ ಕ್ಯಾಟಿಕೋಲ್ ಬಯೋಸೆನ್ಸರ್ಸ್ ಸ್ಪಿಡರ್‌ನ ಸ್ಟಾರ್ಟಪ್‌ಅಂದ ವಿಜೇತರಾದ » ಡಾ.ಎಂ.ಎಂ ಕುರಿತು ಪ್ರಬಂಧ ಮಂಡಿಸಿದ್ದಾರೆ. ಪ್ಲೆನ್ ಮತ್ತು ಇಂಟರ್‌ಗ್ಯಾಪ್ಸ್ ವಿಜ್ಞಾನ ಪ್ರಶಸ್ತಿ ಪಡೆದಿರುವುದು ಸಂತಸ ತಂದಿದೆ. ಆರೋಸಿಯೇಷನ್ ಆಫ್ ಅಡ್ವಾನ್ಸ್ ಪದಕ್ಕೆ ಸಮ್ಮೇಳನದಲ್ಲಿ 400ಕ್ಕೂ ಅಧಿಕ ವಿವಿಧ ಮೆಟೀರಿಯಲ್ಸ್ ಸಹಯೋಗದಲ್ಲಿ ದೇಶಗಳ ವಿಜ್ಞಾನಿಗಳು, ಸಂಶೋಧಕರು ಭಾಜನ ಆಯೋಜಿಸಲಾಗಿದ್ದ ಯುರೋಪಿಯನ್ ನಡೆಸಿದರು. ಜಾಗತಿಕ ಮಟ್ಟದ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಅಡ್ವಾನ್ಸ್ಡ್ ಮೆಟೀರಿಯಲ್ಸ್ ಕಾಂಗ್ರೆಸ್-2017 ನನ್ನ ಪ್ರಬಂಧವೂ ಮಂಡಿಸಿದ್ದು ಮತ್ತಷ್ಟು ಸಂಶೋಧನೆ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಡಾ.ಚೈತನ್ಯ ಆಯ್ಕೆಗೆ ತಯಾರಿಸಿದೆ ಎಂದು ಡಾ.ಚೈತನ್ಯಲಕ್ಷ್ಮಿ ತಿಳಿಸಿದ್ದಾರೆ.

ಸ್ಪಿಡರ್‌ನ ಸ್ಟಾರ್ಟಪ್‌ಅಂದ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಇಖಿಂಂ ವಿಜ್ಞಾನ ಪದಕ ಪಡೆದ ಡಾ.ಚೈತನ್ಯಲಕ್ಷ್ಮಿ ಜತೆ ಗಣ್ಯರು.

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Students offer IoT-based solution for unmanned railway crossings

AdITI.Gyanesh@timesgroup.com

Bengaluru: At a time when train accidents are becoming frequent, six students from CMR Institute of Technology, Bengaluru, have suggested a cost-effective way to the Indian Railways to eliminate accidents at unmanned level crossings.

The project — an Internet of Things-based (IoT) multi-tier system — is currently under the railway ministry's consideration. The system is based on three types of sensors and was presented at the Smart India Hackathon 2017, organized by the central government in April.

"We have given an alternative idea of eliminating unmanned railway crossings across India. It's an automated IoT-based multi-tier system based on sensors. This will buttress the security system of the railways and remove human errors," explained Ishaan Abhinav, a third-year student and member of team Gamma, which came up with the model.

MOOTING SOLUTIONS: The team from CMR Institute of Technology, Bengaluru, aims to reduce railway accidents through their innovative approach

TO PREVENT ACCIDENTS

The model operates on three sensors — radio-frequency identification (RFID) sensor, pressure sensor and optical sensor — to be placed at different points from the crossing. The pressure and optical sensors are triggered by the weight and appearance of trains, respectively.

As soon as the train passes through the RFID sensor located 2.7km from the crossing, an alarm and light system will be activated to signal road users to stop. As the train approaches the pressure sensor — to be placed at 1.75km from the crossing — it's time for the gates to close. By the time the train reaches the optical sensor, placed 1.5km from the crossing, the gates will shut automatically.

"The project doesn't end here. It is often seen that when barricades come down, many walker try to cross the track by slipping underneath. To prevent this, we have added barbed wires to the barricades," said Malvika Vinay, another team member and a third-year engineering student.

The project was readied in two-and-a-half weeks by the team whose members include Madhusoodhanan K M, Adhitya Niranjan, Misha P and Rainy Jain. The students from computer science and mechanical engineering streams were mentored by Sudhir Routray, Sharmila K P and Rahul Nyamangoudar.

"We went till the final round of the hackathon. The PM addressed us and spoke about the problems faced by the Railways," said Madhusoodanan.

Said professor Sharmila, head of the department for telecommunication: "It's a low-budget solution for railways as these sensors don't require much power or battery to run till about four to five years. We are now making changes in the project as suggested by the ministry of railways."

CHANGES SOUGHT

The railways has asked the students to further work on the system. The ministry has sought changes in the RFID system to be able to detect the train name and number. A four-barricade system has been suggested to help road users, who get stuck between two closed barricades. It has also been suggested to use lithium ion battery for the sensors.

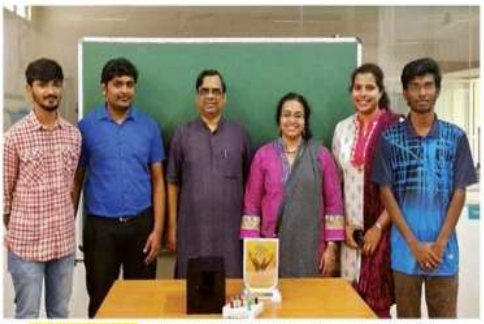
The students have been asked to look into issues of power supply and vandalism at unmanned railway crossings.

GOING BY STATS

At the hackathon, the students had various options to work on, but they chose unmanned railway crossings.

Their analysis of Indian Railways' statistical reports between 2009 and 2015 showed that 40.7% of train accidents occurred due to failure of railway staff and 45.7% due to others' faults. Most accidents due to failure of people other than railway employees have occurred at unmanned crossings, where the liability is primarily on road users, the reports revealed.

Now a device to test metal content of water in your home



The CMR college team with the portable gadget which can help test metal content in water used at home —DC

RALPH ALEX ARAKAL | DC
BENGALURU, SEPT. 14

Worried about the quality of water supplied to your home? There could now be a solution at hand as two engineering students from the city have developed the prototype of a gadget, which could help people test the metal content of the water used in their homes.

The portable device developed by Antony Micheal Jenitter, 20, a final year telecom engineering student of CMR Institute of Technology, Kundalahalli, and Nitin Kumar, a third year student of the same college, can come in handy for farmers too as it can establish the mineral content of soil as well.

"With water pollution on the rise in almost every metropolitan city there are carcinogenic heavy metals in water bodies, which are also potential drinking water sources, and this is something that needs to be dealt with urgently," points out Antony, explaining the relevance of the device.

He also notes that usually the mineral content of soil can be identified only after a sample is sent to a lab and if farmers spend at least Rs 150 on the tests. But now they can test it themselves and at much cheaper cost as the new device along with the necessary reagents for the testing, costs under Rs 1000 and each test, merely around Rs 3.

The prototype was designed as part of Research and Development (R&D) for a project led by Prof. Bhavya, a civil engineering lecturer at CMRIT for her doctoral thesis.

The team is currently approaching companies for funding to mass produce the gadget and is planning to apply for a global patent for it before introducing it in the market.

THE NEW DEVICE IS

- Portable and low-cost
- Identifies metal content in water sample
- Displays mineral content of soil sample

Grand finale

Millennials steal the show

It was a stunning medley of style, creativity and attitude that marked the end of the seventh edition of the 'Deccan Herald Metrolife Fashion Show', presented by TRENDS.

The grand finale, which was held at Dayananda Sagar Institutions, Kumaraswamy Layout, had two rounds- the first one being the creative round, for which the theme was 'Power of Millennials', and the second non-competitive round where the students showcased the latest collection from TRENDS.

Mount Carmel College walked away with the first prize of gift vouchers worth Rs one lakh. The girls presented a collection that aimed to blend nature and technology. The predominantly white outfits with a hint of colour in some, clashed beautifully with the extravagant flowery headgear that was a riot of colours. The highlight was the entry of two showstoppers on motorised roller blades.

The second prize of gift vouchers worth Rs 80,000 went to Surana College for a glamorous line that comprised of shades of beige and golden with glitter and shine interspersed with muted hues. The oomph factor was added with eclectic hairdos and messages like 'stop rape', 'Don't judge by my clothes' and more written on the students' torsos.

The third prize of gift vouchers worth Rs 60,000 went to Army Institute of Fashion and Design for a show that brought down the house.

The collection was aimed at the woman of today who does not comply with restrictions. Black drapes covered the girls initially which were later pulled off to reveal satin and tulle outfits in pink and white with flowers and barbed wire as embellishments. Huge handmade props added to the dramatic element.

T John College bagged the fourth prize of gift vouchers worth Rs 35,000. The handmade and hand painted outfits were heavily inspired by old-world Egyptian style.

Exotic headgear and colourful neck embellishments were combined with printed dresses that had handpainted drapes which were revealed later in a surprise twist.

The fifth prize of gift vouchers worth Rs 35,000 went to Vogue Institute of Fashion Technology, Daddaballapura. The minimalistic range saw innovative outfits in shades of brown and grey with white drapes.

The sixth place, which had gift vouchers worth Rs 20,000, was bagged by St. Joseph's College (Autonomous). Inspired by technology, the collection saw futuristic outfits that were made from reused items. The entirely black and silver garments were enhanced with wires, LED lights, cardboard machinery, CD pieces and more to present a spectacular display.

The seventh prize of gift vouchers worth Rs 20,000 went to The Oxford College of Science for a line that showcased black dresses with white flowery trimming and Victorian English headgear. The boys were formals with a funky twist.

The eighth prize of gift vouchers worth Rs 10,000 was bagged by CMR Institute of Technology. The students showcased indo-fusion outfits that were a melange of rich reds, deep blacks and shining golds.

The ninth prize of gift vouchers worth Rs 5,000 went to Vogue Institute of Fashion Technology, Richmond Circle. Innovative silhouettes in muted colours were paired with quirky headgear that had cutouts of images representing different professions.

The tenth place, with gift vouchers worth Rs 5,000, was claimed by CMR University - City Campus for a range that displayed bright vibrant outfits with some glow-in-the-dark props. Dinesh from The Oxford College of Science won the title of 'Best Male Model' while Akshara from Mount Carmel College was adjudged 'Best Female Model'. Both won gift vouchers worth Rs 12,500 each.

The non-competitive brand round saw all the teams showcasing the 'Festive/ Winter 2017 collection' of TRENDS.

High-octane dance performances kept the audience entertained in between the event.

The opening act by Aayana Dance Company was an entertaining mix of energy and expressiveness and set the tone for the evening.

The other dances were performed by students of Army Institute of Fashion and Design and Mount Carmel College. DJ Sachin kept up the tempo with groovy beats while RJ Amar, who was the host, kept the spirits flying high throughout the event.

The judges for the event were fashion guru Prasad Bidapa, fashion designer Paresh Lamba, Sandalwood actors Raghu Mukherjee, Anu Prabhakar Mukherjee and Radhika Chetan as well as fashion blogger Anuja Pandey. The guest of honour was Sandalwood actor Rajini Dwivedi. Rajitha Menon

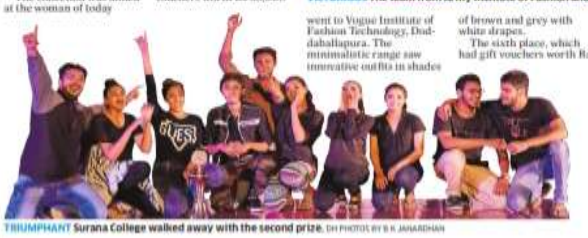
(More pictures on Page 2 and 3)

PROUD MOMENT The team from Mount Carmel College bagged the first prize.

JUBILANT Akshara, winner of 'Best Female Model' with the judges.

SOARING HIGH Dinesh, winner of 'Best Male Model', with the judges.

VICTORIOUS The team from Army Institute of Fashion and Design who got the third prize.



TRIUMPHANT Surana College walked away with the second prize. DH PHOTOS BY B K JANARDHAN

'ಸಿಎಂಆರ್‌ಐಟಿಗೆ ₹50 ಲಕ್ಷ ಸಹಾಯಧನ'

ಬೆಂಗಳೂರು: 'ವಿದ್ಯಾರ್ಥಿಗಳು ಹೊಸ ಆವಿಷ್ಕಾರಗಳಲ್ಲಿ ತೊಡಗಿಸಿಕೊಳ್ಳುವಂತೆ ಉತ್ತೇಜನವನ ಉದ್ದೇಶದಿಂದ ಸಿ.ಎಂ.ಆರ್ ತಾಂತ್ರಿಕ ಮಹಾವಿದ್ಯಾಲಯಕ್ಕೆ ₹50 ಲಕ್ಷ ಸಹಾಯಧನ ನೀಡುತ್ತೇವೆ' ಎಂದು ಮಾಹಿತಿ ತಂತ್ರಜ್ಞಾನ ಸಚಿವ ಪ್ರಿಯಾಂಕ್ ಖರ್ಗೆ ಹೇಳಿದರು.

ಮಹಾವಿದ್ಯಾಲಯದಲ್ಲಿ ಹಮ್ಮಿಕೊಂಡಿದ್ದ 2017-18ನೇ ಸಾಲಿನ ವಿದ್ಯಾರ್ಥಿಗಳ ಸ್ವಾಗತ ಸಮಾರಂಭದಲ್ಲಿ ಅವರು ಮಾತನಾಡಿದರು. 'ಸಮಾಜಕ್ಕೆ ಉಪಯುಕ್ತವಾಗುವ ಅವಿಷ್ಕಾರ ಮಾಡಬೇಕು. ಸಿಎಂಆರ್‌ಐಟಿನಲ್ಲಿ ಅಧ್ಯಯನ ಮಾಡಿದ ವಿದ್ಯಾರ್ಥಿಗಳು ತಂತ್ರಜ್ಞಾನ ಕ್ಷೇತ್ರದಲ್ಲಿ ಒಳ್ಳೆಯ ಹೆಸರು ಮಾಡಿದ್ದಾರೆ' ಎಂದು ಶ್ಲಾಘಿಸಿದರು. ಸಿ.ಎಂ.ಆರ್ ಸಮೂಹ ಶಿಕ್ಷಣ ಸಂಸ್ಥೆಗಳ ಅಧ್ಯಕ್ಷ ಕೆ.ಸಿ. ರಾಮಮೂರ್ತಿ, 'ಸಂಸ್ಥೆಯು ನಾಮಿನಿಗೆ ಒಟ್ಟು ನೀಡುತ್ತಿದೆ. ಹೊಸ ಆವಿಷ್ಕಾರಗಳಲ್ಲಿ ತೊಡಗುವಂತೆ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಉತ್ತೇಜನ ನೀಡಲಾಗುತ್ತಿದೆ. ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಮಾಜಿಕ ಚಿಂತನೆಗಳು ಮೂಡಿಸಲು ಅನೇಕ ಕಾರ್ಯಕ್ರಮಗಳನ್ನು ಹಮ್ಮಿಕೊಳ್ಳಲಾಗಿದೆ' ಎಂದರು.

'ಸಂಸ್ಥೆಯಲ್ಲಿ ಒಟ್ಟು 15 ಸಾವಿರ ವಿದ್ಯಾರ್ಥಿಗಳು ಅಧ್ಯಯನ ನಡೆಸುತ್ತಿದ್ದಾರೆ. ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಯಕತ್ವದ ಗುಣ ಬೆಳೆಸಲು ಸಾಕ್ಷಮವು ಪೂರಕವಾಗಿದೆ. ಕ್ರೀಡೆ, ಕ್ರೀಡಾ ಮತ್ತು ಸಾಂಸ್ಕೃತಿಕ ಕಾರ್ಯಕ್ರಮಗಳಿಗೂ ಪ್ರೋತ್ಸಾಹ ನೀಡಲಾಗುತ್ತಿದೆ' ಎಂದರು. ವಿವಿಧ ರೀತಿಯ ಸ್ಪಾರ್ಧೆ ಮಾಡಿದ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಕಾರ್ಯಕ್ರಮದ ನಂತರ ಪ್ರಿಯಾಂಕ್ ಪ್ರಮಾಣಪತ್ರ ನೀಡಿದರು.

ಕನ್ನಡಪ್ರಭ

ಸಿಎಂಆರ್ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾನಿಲಯ ಸೋಮವಾರ ಆಯೋಜಿಸಿದ್ದ ವೈಟ್‌ಫೀಲ್ಡ್ ಚಟುವಟಿಕೆಗಳ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಸಚಿವ ಪ್ರಿಯಾಂಕ್ ಖರ್ಗೆ ಅವರು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಸರ್ಟಿಫಿಕೇಟ್ ವಿತರಿಸಿದರು. ಪ್ರಾಂಶುಪಾಲ ಸಂಜಯ್ ಜೈನ್, ರಾಜ್ಯಸಭೆ ಸದಸ್ಯ ಸಿ.ಎಂ.ರಾಮಮೂರ್ತಿ ಇತರರಿದ್ದರು.

Bengaluru
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ALL ABOUT ENERGETIC PERFORMANCES

Bangalore Times fresh face 2017

CMR INSTITUTE OF TECHNOLOGY

Sandra.Fernandes@timesgroup.com

The OPPO Bangalore Times Fresh Face held at CMR Institute of Technology was nothing short of an extravagant affair. With 47 participants, there was no dearth of talent and what's more — the audience enjoyed the performances as much as actor and celebrity judge for the evening Bhuvann Ponannaa.

For the first round, participants showed off their talents ranging from martial arts, dancing, beat boxing and acting. While Sanjana floored us with her yoga act, S Stephen shaking a leg to *Despacito* got the crowd all pumped up. Uday Kumar's beat boxing skills were appreciated by many and Kavya rapping to *Love The Way You Lie* was the perfect way to end the first round.

Bhuvann, who enjoyed the performances throughout, had a tough task of choosing the best performers from the entire lot and chose 14 students — seven boys and seven girls — for the second round. Ameena Meraj and Shrikesh S were adjudged the winners whereas Arpitha R and Nganba Irom, who impressed the judge with their dance moves, were announced the first runners-up. Finally, Sagarikaa Sinha and S Stephen were announced as the second runners-up respectively.

WINNER
AMEENA MERAJ

Bhuvann Ponannaa

Students pose for a shot on the OPPO F3 Selfie Expert dual front camera phone

WINNER
SHRIKESH S

1st runner-up
NGANBA IROM

1st runner-up
ARPITHA R

2nd runner-up
SAGARIKAA SINHA

2nd runner-up
S STEPHEN

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Citizens take up Swachhata seva

Cleanathon to Celebrate Gandhi

TIMES NEWS NETWORK

Bengaluru: Inspired by Mahatma Gandhi, several civic organizations, residents' associations, charitable foundations and other groups undertook cleaning drives of differing scales in various parts of the city. By being the change they wished to see in the world, citizens of Bengaluru not only brought Gandhi's words to life but also cleaned up parts of the city they call home.

Beautiful Bengaluru, a citizens' initiative to work towards a cleaner, greener city, released a series of powerful litter awareness posters through which they tackled some common issues, like people not cleaning up after their pets, and littering from moving cars.

HAL celebrated Gandhi Jayanti by undertaking the Swachhata Hi Seva campaign. Employees and their families cleaned a part of the stretch leading to HAL Airport, which is normally lined with garbage and debris.

A group of residents from Ward 8, led by Prabha Mudda, 30, got together to raise awareness in their ward by speaking to people about proper disposal of garbage. The group, in association with United Bengaluru, was joined by a BBMP health inspector.

Pics: Chethan Shivakumar

FOR OUR CITY: AIKYA volunteers clean up Yeshwantpur Metro Station as part of the Akshaya Patra Foundation initiative; (left) On the Metro with their brooms & pails

Akshaya Patra takes msg to schools

On the third anniversary of the introduction of Swachh Bharat Abhiyan, the Akshaya Patra Foundation pledged on Monday to impart values of personal hygiene and cleanliness to nearly 16.7 lakh children in the course of the year.

The initiative will be carried out in 13,839 government and government-aided schools, whom the Foundation serves in 12 states. It will engage young college-goers and working professionals to educate the kids.

Terming it the 'Swachh Vidyarthi, Swachh Vidyalaya, Swacch Gruha' initiative, Shridhar Venkat, CEO of Akshaya Patra Foundation, said it was time for the organization to honour another need of the country.

"We have been working to serve children by providing one hot meal since 2000, when we started out with feeding just 1,500 kids. Now, we want them to study in clean, safe schools. The International Society for Krishna Consciousness (Iskcon) is a symbol for internal and external cleanliness. It is time to take a pledge for a clean India," he said.

Members of AIKYA, the youth association of Akshaya Patra Foundation, are going out to spread the message among impressionable children. Iskcon vice-president Chanchalapati Dasa said the idea was to bring about a sustainable social engineering solution to the problem of cleanliness.

"We also hope to reach out to parents and nearly 50 lakh people in the course of a year. Screening impactful films, using song and dance sequences, putting up street plays in regional languages are our primary forms of intervention. However, we have to develop a sustainable social engineering solution and do root cause analysis to sustain it," he said, stating that human behaviour had to change for systemic change.

Speaking of the letter he received from Prime Minister Modi a few weeks ago, Madhu Pandit Dasa, founder of Akshaya Patra, said that while there were many philosophies and truths that Indians believed in, they were yet to live by them.

"As a country, we are in a state of flux and we need to work towards cleanliness of the environment, green power and a clean government, and lead the rest of the world. There are currently 12 crore children studying in government schools across India. The future of the nation will change if we can reach out to them," he said.

Divided into teams of nearly 50 volunteers, members of AIKYA, armed with brooms and dustpans, cleaned up 20 locations across the city. From KR Market to Yeshwantpur Railway Station to Banashankari, the volunteers spread out to start ridding the city of its garbage.

The areas shortlisted were in the vicinity of government schools there. Wearing face masks to protect themselves from dust, and travelling with their cleaning paraphernalia of brooms and pails, the groups were a sight for daily commuters on Namma Metro.

Students from PES University, St Joseph's, CMR University, Jain College and many other institutions participated in the drive.

Volunteer army fixes black spots, lakes across city

Making cleanliness a priority on the 148th birth anniversary of Mahatma Gandhi, 14,000-16,000 citizens came on to the streets on Monday for Swachh Bengaluru, a mega cleanathon. Citizens in 72 wards cleaned up black spots in their areas and helped clean nine lakes. In certain areas, cleaning was also accompanied by painting of walls.

MP Rajeev Chandrasekhar visited Jayanagar, Halagevadera Halli lake and Nagarabhavi, and interacted with citizens about their problems and concerns.

"Bengaluru is a great city and is our home, we owe it to Namma Bengaluru. It is time for citizens to come out and reclaim and protect this beautiful city. I am happy to see so many citizens, citizen groups and students come out in large numbers to clean these wards and lakes. If all citizens come together, we can fulfil the dream of Swachh Bengaluru. This is only the beginning to turn Namma Bengaluru into a Swachh Bengaluru," Chandrasekhar said.

ON THE JOB: MP Rajeev Chandrashekhar and a group of volunteers clean up Halagevaderahalli Lake on Monday

The citizens worked around lakes like Kaggadasapura, Halagevadera Halli, Horamavu, Jayanti Nagara, Sampigehalli, Chikkabanavara, Venkateshpura, Talaghatapura and Mahadevapura. Maximum citizen participation came from Jayanagar, where over 400 people gathered at Halagevaderahalli, Rajajinagar, Basaveswehwar Nagar, Sampigehalli and Horamavu.

TIMES VIEW

Bengaluru littered with festival waste and plagued by garbage contractors failing to pick up trash needs more than just an army of students and citizens sweeping the streets for a day. While the Swachh initiative on Gandhi Jayanti took off well, and deserves to be lauded for raising civic awareness among the young, our civic administration desperately needs to set its house in order. At best, the city can be termed filthy, with residents failing to follow Swachh principles in their daily lives. Only when civic awareness filters down to each household can we hope to see change.

'ಸೂರ್ಯನ ಅಧ್ಯಯನಕ್ಕೆ ರೇಡಿಯೋ ಅಲೆ ನೆರವು'

■ **ವಿಕ ಸುದ್ದಿಲೋಕ** ಬೆಂಗಳೂರು

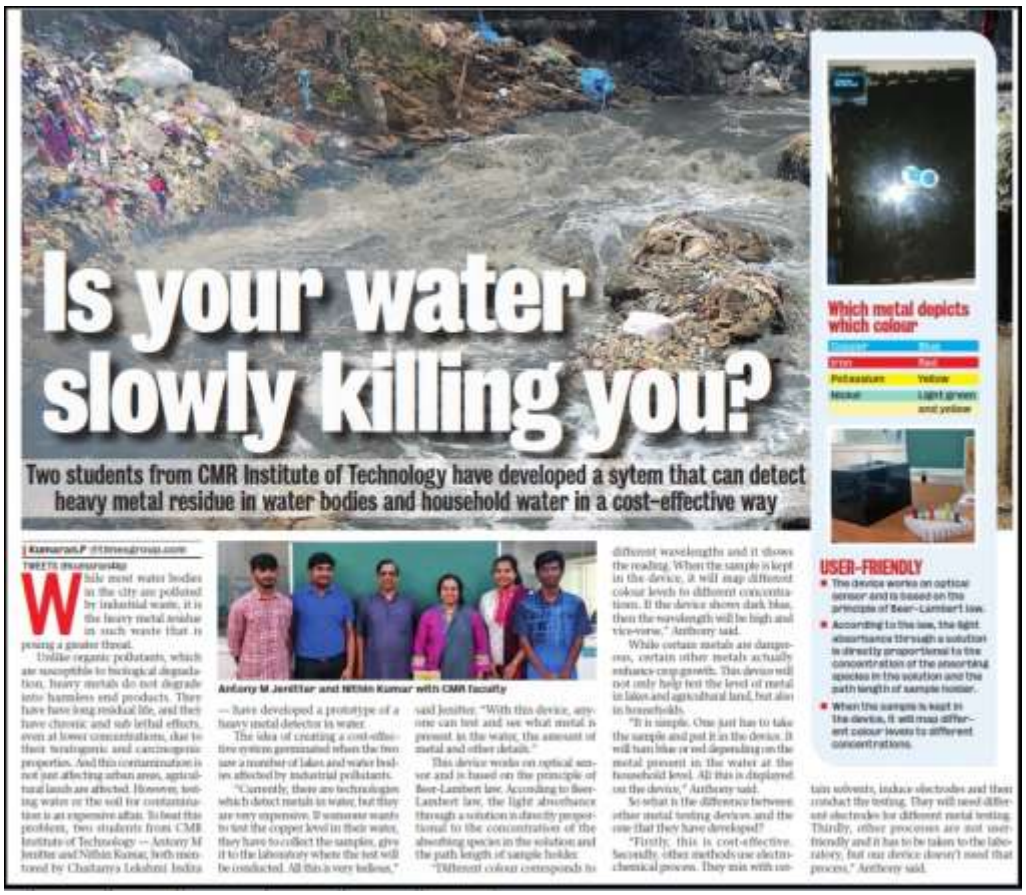
ಸೂರ್ಯನಿಂದ ಹೊರಹೊಮ್ಮುವ ರೇಡಿಯೋ ಅಲೆಗಳ ಮೂಲಕ ಸೂರ್ಯನಲ್ಲಿ ನಡೆಯುತ್ತಿರುವ ಪ್ರಕ್ರಿಯೆಗಳ ಕುರಿತು ಅಧ್ಯಯನ ನಡೆಸಬಹುದು ಎಂದು ಭಾರತೀಯ ಖಗೋಳ ವಿಜ್ಞಾನ ಮಂದಿರದ ಸಂಶೋಧಕ ಡಾ. ಕಥಿರವನ್ ಹೇಳಿದರು.

ಸಿ.ಎಂ.ಆರ್. ತಾಂತ್ರಿಕ ವಿದ್ಯಾಲಯದ ಸಭಾಂಗಣದಲ್ಲಿ ಆಯೋಜಿಸಿದ್ದ 'ರೇಡಿಯೋ ಖಗೋಳ ವಿಜ್ಞಾನದಲ್ಲಿನ ಇತ್ತೀಚಿನ ಬೆಳವಣಿಗೆಗಳು' ಉಪನ್ಯಾಸ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಅವರು ಮಾತನಾಡಿದರು.

''ಸೂರ್ಯನಲ್ಲಿ ಅಗಾಧವಾದ ಕಾಂತಕ್ಷೇತ್ರವಿದ್ದು, ಅದರ ಪರಿಣಾಮವಾಗಿ ಸೌರ ಜ್ವಾಲೆಗಳು ಹೊರಹೊಮ್ಮುವಾಗ ಉತ್ಪತ್ತಿಯಾಗುವ ಎಲೆಕ್ಟಾನ್ ಮತ್ತು ಪ್ರೋಟಾನ್ ಕಣಗಳು ಅತಿ ವೇಗದಲ್ಲಿ ಪ್ರಸರಿಸುತ್ತವೆ. ಈ ಕ್ರಿಯೆಯಲ್ಲಿ ರೇಡಿಯೋ ಅಲೆಗಳು ಉತ್ಪತ್ತಿಯಾಗಿ ಭೂಮಿಯನ್ನು ತಲುಪುತ್ತವೆ. ಹೀಗೆ ಭೂಮಿಯನ್ನು ತಲುಪುವ ಅಲೆಗಳನ್ನು ಆ್ಯಂಟಾನಾ ಮತ್ತು ಪತ್ತೆಕಾರಿ ಉಪಕರಣಗಳಿಂದ ಸೌರ ಜ್ವಾಲೆಗಳ ಆಗಮನವನ್ನು ಅಧ್ಯಯನ ಮಾಡಬಹುದು'' ಎಂದು ವಿವರಿಸಿದರು. ಇತ್ತೀಚೆಗೆ ಉಡಾಯಿಸಲಾದ ಸ್ವಿರಿಯೋ ಉಪಗ್ರಹ ಹಾಗೂ ಭಾರತದಿಂದ ಅಭಿವೃದ್ಧಿ ಪಡಿಸಲಾಗುತ್ತಿರುವ ಆತ್ಯಾಧುನಿಕ ಉಪಗ್ರಹ 'ಆದಿತ್ಯ' ಕುರಿತು ಅವರು ಮಾಹಿತಿ ನೀಡಿದರು. ಭಾರತೀಯ ಖಗೋಳ ವಿಜ್ಞಾನ ಮಂದಿರವು ಗೌರಿಬಿದನೂರಿನಲ್ಲಿ ಸ್ಥಾಪಿಸಿರುವ ಸೌರ ಅಧ್ಯಯನ ಪ್ರಯೋಗಾಲಯದಲ್ಲಿ ಬಳಸುವ ತಂತ್ರಜ್ಞಾನದ ವಿವರವನ್ನು ನೀಡಿದರು.

ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಎಲೆಕ್ಟಾನಿಕ್ಸ್, ಎಲೆಕ್ಟಿಕಲ್ ಎಂಜಿನಿಯರಿಂಗ್ ವಿಭಾಗದ ನೂರಾರು ವಿದ್ಯಾರ್ಥಿಗಳು ಪಾಲ್ಗೊಂಡಿದ್ದರು. ಸಿಎಂಆರ್ ತಾಂತ್ರಿಕ ವಿದ್ಯಾಲಯದ ಪ್ರಾಂಶುಪಾಲ ಡಾ. ಸಂಜಯ್, ಭೌತಶಾಸ್ತ್ರ ವಿಭಾಗದ ಮುಖ್ಯಸ್ಥ ಡಾ. ರವೀಶ್ ಮತ್ತಿತರರು ಉಪಸ್ಥಿತರಿದ್ದರು.

ಸಂತೋಷ್ ಡಾ. ಕಥಿರವನ್ ಅಭಿಮತ



Is your water slowly killing you?

Two students from CMR Institute of Technology have developed a sytem that can detect heavy metal residue in water bodies and household water in a cost-effective way

Kumaran.P

TWEETS @kumaranvidya

While most water bodies in the city are polluted by industrial waste, it is the heavy metal residue in such waste that is posing a greater threat.

Unlike organic pollutants, which are susceptible to biological degradation, heavy metals do not degrade into harmless end products. They have have long residual life, and they have chronic and sub lethal effects, even at lower concentrations, due to their teratogenic and carcinogenic properties. And this contamination is not just affecting urban areas, agricultural lands are affected. However, testing water or the soil for contamination is an expensive affair. To beat this problem, two students from CMR Institute of Technology — Antony M Jeraltar and Nithin Kumar, both mentored by Chaitanya Lakshmi Indira — have developed a prototype of a heavy metal detector in water.

Antony M Jeraltar and Nithin Kumar with CMR faculty

The idea of creating a cost-effective system germinated when the two saw a number of lakes and water bodies affected by industrial pollutants.

"Currently, there are technologies which detect metals in water, but they are very expensive. If someone wants to test the copper level in their water, they have to collect the samples, give it to the laboratory where the test will be conducted. All this is very tedious," said Jeraltar. "With this device, anyone can test and see what metal is present in the water, the amount of metal and other details."

This device works on optical sensor and is based on the principle of Beer-Lambert law. According to Beer-Lambert law, the light absorbance through a solution is directly proportional to the concentration of the absorbing species in the solution and the path length of sample holder.

"Different colour corresponds to different wavelengths and it shows the reading. When the sample is kept in the device, it will map different colour levels to different concentrations. If the device shows dark blue, then the wavelength will be high and vice-versa," Anthony said.

While certain metals are dangerous, certain other metals actually enhance crop growth. This device will not only help test the level of metal in lakes and agricultural land, but also in households.

"It is simple. One just has to take the sample and put it in the device. It will turn blue or red depending on the metal present in the water at the household level. All this is displayed on the device," Anthony said.

So what is the difference between other metal testing devices and the one that they have developed?

"Firstly, this is cost-effective. Secondly, other methods use electrochemical process. They mix with certain solvents, induce electrodes and then conduct the testing. They will need different electrodes for different metal testing. Thirdly, other processes are not user-friendly and it has to be taken to the laboratory, but our device doesn't need that process," Anthony said.

Which metal depicts which colour

Copper	Blue
Iron	Red
Potassium	Yellow
Nickel	Light green and yellow

USER-FRIENDLY

- The device works on optical sensor and is based on the principle of Beer-Lambert law.
- According to the law, the light absorbance through a solution is directly proportional to the concentration of the absorbing species in the solution and the path length of sample holder.
- When the sample is kept in the device, it will map different colour levels to different concentrations.

Engineers open Internet to all

Former students of CMRIT have devised a reader that can help visually challenged access online data

(L-R) The team of engineers behind Sparsh and a woman testing out the device designed exclusively for the visually challenged

Ramzauva Chhakchhuak

While the Internet has become a basic human necessity, the blind and visually impaired have little means to access it. As a way to help such people, a group of engineers from the city have built a device that converts online text into braille.

Called Sparsh, the device uses electro-mechanical technology that reproduces the content of a smartphone or a computer on a rolling display in braille. Powered by a Dynamic Braille Board or dBB, it enables streaming of digital data into its equivalent braille output in real-time.

While similar devices are available in the market, Kiran L, a telecommunication engineer who along with three other friends developed the device, points out a number of features that are unique to Sparsh. They are all former students of the CMR Institute of Technology.

"One of the most unique features of our device is the fact that its users can scroll through the text at their own pace. This is a feature that is not available in most products. They have a standard speed that cannot be customised to match the reading abilities of users. Some may be fast readers while others are slow and our the device caters to one and all," he adds.

Another feature is an audio bookmark that marks the page they stopped at. The device also comes with a self-learning feature, which means that you do not need anyone's assistance on how to use it.

"One of the most unique features of our device is the fact that its users can scroll through the text at their own pace."

— Kiran L, one of the engineers behind Sparsh

The main USP of the device is its price. While so far only the prototype has been built and once finished it will cost around Rs 6,000, or even lesser. "For a similar product, the normal charges are anywhere around $3,000 outside India. The cheapest price in India is around ₹60,000 to ₹ 70,000. This device will be the first of its kind in India, but it is not a breakthrough invention," Kiran says.

The team plan to approach corporates and the government for commercialisation after the final product is made.

Sparsh consists of a single cell forming a rolling display that is projected onto the user's finger, thereby enabling them to read out digital content. The device can be connected to a computer or phones via Bluetooth. It has a memory card. Once it is switched on, the user can connect to it with an earphone via an audiojack and browse the files. The machine also reads out the file names or they can also use the braille display to read and select the files.

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A WHOLE NEW WORLD

Device developed by engineers helps the visually impaired use tools such as the Internet and E-commerce

Prajeet.Nair
@timesgroup.com
TWEETS @PrajeetnMirror

Do you know, of the 37 million blind people across the globe, over 15 million are from India? And because of their blindness, many of them stay illiterate because of lack of educational and poverty.

Vivekananda, a visually impaired student at the Rakum School for Blind, Indiranagar, has done an MA and now he is preparing for the Civil Services exams. He says, "I don't have many books to read. Whatever I have, they are very big and heavy. It really gets difficult to carry them with us always. Also, I think exposure to Internet will help in many ways."

Seeing what Vivekananda and other blind students go through in their daily lives, four young engineering graduates have come up with a device that will give visually impaired people access to braille content via a screen. It is a form of writing used by people who are blind.

Have you ever thought of how visually impaired people navigate through e-commerce sites or surf the internet? Well, to help users access e-commerce, a device called Sparsh will route them through a special portal that will convert the screen text into braille in real-time and read it out so the user can select the product at the press of a tab on the device and then go on to the payment process.

Sparsh is an electro-mechanical technology that reproduces the content of a smartphone or a computer on a rolling display in braille. The device can be connected to your computer or phones via Bluetooth. While right now, the device is about the size of a small shoe box, the final product will be as small as a digital mouse, with the rolling braille display running on it like a scroller. It is expected to be launched by the end of this month.

Sparsh is the brainchild of four city-based engineers — Kiran L Reddy, Rohit Neil, Siddhanth Gaonkar of CMR Institute of Technology and Vishnu Ramakrishna of MVJ College of Engineering, Bengaluru. They all graduated together in 2016. Another student of the Rakum School for Blind and the current headmistress, Bhavya SN, says, "One page of normal text is three pages in braille. So, braille users have to refer to heavy books and it gets really difficult to carry around every time. If the device is launched in the market, it will help us get rid of that load as it's a small, portable device. That will be of great value to us. Somehow, we have given some suggestions to the team about how can they improve the device. Right now, the braille shows only one character at a time, which is good for beginners, but for us it is a bit slow. If they make two or more characters together, the device will be perfect for us."

A user of Sparsh, the device developed by the four engineers from Bengaluru

Total number of blind people globally	Number in India alone	Price of the device in India	Cost of comparable device in the US	Starting price of such devices globally
37mn	15mn	₹6,000	$2,000	₹75,000

Sparsh is an attempt at bridging the gap between technology and the visually impaired. This device enables the visually impaired to stream digital data into its equivalent Braille output in real-time. It consists of a single cell forming a rolling display that is projected onto the user's finger, thereby enabling them to read out digital content and access media. With the world moving rapidly into the digital space, the visually impaired use assistive technology like screen-readers and magnification tools to engage in the digital space, which however, are not supported by many banking firms. This initiative would help visually impaired cope up with the challenges they face as the evolves.

Team Sparsh says it's time to give back to society

The device also has a memory card. Once it is switched on, a blind student can connect to it with an earphone via an audiojack and browse the files. The machine also reads out the file names or they can also use the braille display to read and the select the files.

The device will be the first of its kind in India, but it is not a breakthrough invention. There are similar gadgets available in western countries. But what sets it apart is its low cost. It is priced at just Rs. 5,000 - Rs. 6,000 while a comparable device in the US costs $2,000, or about Rs 1.29 lakh in India. The starting price of such devices is Rs 75,000.

After getting placed in MNCs, the team decided to get down to work on their project Sparsh. The idea, according to them, was to give back to society.

Features in a nutshell

- The device can be connected to a PC or any phone via Bluetooth – once the device is connected, the digital data entered in the phone or the PC is sent to the device and the device converts the digital data into Braille
- The device also has a speed control knob so that the user can read at his/her own pace
- The device also has a SD card slot and a USB slot so that the user can store the digital data in real-time
- Speech-to-Braille conversation in real-time
- Works as a portal for data and information. Enables the user to get updates, modules, browse blogs and real-time news updates
- Perkins-style Bluetooth enabled-keyboard, making inputs easier and enabling Internet browsing

The idea is concrete, but it has its pores too

Students make a concrete block that allows water to seep through

Kumaran.P
@timesgroup.com
TWEETS: @kumaranstoi

The block, which was made at the CMR Institute lab, allows rain water to seep into the ground

The city loves the rains, but dreads it too as it destroys pavements. The rainwater gets clogged or flows only the roads because of improperly planned outlets or inlets to storm water drains.

Now, four students have come up with an amazing idea, to allow rainwater to permeate into the drain and even recharge groundwater.

The four from the CMR Institute of Technology- Nandhini RT, Danish Akhtar, Netravathi O, Manoj GK, are final-year students from the Civil Engineering department and their idea is that of the pervious concrete block.

"We live in a concrete jungle and even the ground has been concretised. So there is no way for water to seep into the ground. We are also facing a crisis in terms of groundwater. So we decided to do something about it. This is how we came up with the idea of the pervious concrete block," said Danish.

The block is made of coarse aggregate of 6mm width. "This is also called baby aggregate. We used cement (Portland cement) according to the design and no sand was used. If we do not use the sand, there is a chance for the water to seep into the ground. We also mix water in the needed proportion and based on design," he explained.

These blocks were manufactured in their college and tested by the students. Nandhini explained the process. "We first take the aggregate and cement and mix it with water (as a ratio). The mix is then put in a mould of the shape or size required. Then we kept it in the lab for it to dry at room temperature. We did not use an oven to dry it. Then, we cured it in the curing tank for 28 days. We produced 15-20 blocks for the first time. The next process is the testing."

When asked if the structure would be more fragile as it has pores, Nandini said the block was put through a compression test. "This test shows us how much load it can take. We do it on the 3rd, 7th, 10th and 28th day to check the strength. By day 7, it would have gained its maximum strength. When we did the compression test, it was 17.25 newton per mm—which means it is 70 per cent strong," she said. The students said these blocks would help the water percolate to the ground.

Danish said, "It will even reduce the temperature of the area by 2 per cent. This happens because there are pores and the water seeps through it so the transpiration of the blocks maintains the temperature. We are researching more on this and working on a ratio."

The cost of this pervious concrete blocks was Rs 10 a unit as against the normal concrete blocks that cost up to Rs 20-25, Nandhini said. "This could be used at the end of the roads, footpaths and parking lots. We are still testing how it can be used in bulk and how it can withstand heavy weight."

Their mentor Preethi Jacob said, "When the students discussed their work, experts appreciated it and asked if they could scale it up. A paver machinery company also approached us to take this forward. We do not want to make it commercial as of now. We want the students to explore more and do more."

ಸಿಎಂಆರ್‌ಐಟಿ ವಿದ್ಯಾರ್ಥಿಗಳಿಂದ ಕಾಂಕ್ರೀಟ್ ಬ್ಲಾಕ್ ಅನ್ವೇಷಣೆ

ವಿಶ್ವವಾಣಿ ಸುದ್ದಿಮನೆ ಬೆಂಗಳೂರು

ನಗರದ ಸಿಎಂಆರ್ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಟೆಕ್ನಾಲಜಿಯ ವಿದ್ಯಾರ್ಥಿಗಳು ತಮ್ಮ ವೃತ್ತಿ ಕೌಶಲ ಬಳಸಿ ವಿಶೇಷ ರೀತಿಯ ನೊತನ ಪ್ರಿವಿಯಸ್ ಕಾಂಕ್ರೀಟ್ ಬ್ಲಾಕ್‌ನ್ನು(ಪಿಸಿಬಿ) ಅನ್ವೇಷಣೆ ಮಾಡಿದ್ದಾರೆ.

ನೀರು ಸಾಂದ್ರೀಕರಣಕ್ಕೆ ಪೂರಕವಾಗುವಂತೆ, ಮಳೆ ನೀರು ಭೂಮಿಯಲ್ಲಿ ಇಂಗುವಂತೆ ಈ ಕಾಂಕ್ರೀಟ್ ಬ್ಲಾಕ್ ಉತ್ಪನ್ನವನ್ನು ಸಿದ್ಧಪಡಿಸಿದ್ದಾರೆ. ಇದರಿಂದ ಅಂತರ್ಜಲ ಮರುಪೂರಣಗೊಳ್ಳಲಿದೆ. ವಿದ್ಯಾರ್ಥಿಗಳು ಕಮ್ಮದೇ ಆದ ಅನುಪಾತದಲ್ಲಿ ನೀರು, ಸಿಮೆಂಟ್‌ನ್ನು ಬಳಸಿ ಸಿದ್ಧಪಡಿಸಿದ್ದಾರೆ.

ಪಿಸಿಬಿಯನ್ನು ಕಡಿಮೆ ಒತ್ತಡದ ಸ್ಥಳಗಳಾದ ವಾಹನ ಪಾರ್ಕಿಂಗ್ ಲಾಟ್, ಪಾದಚಾರಿ ಮಾರ್ಗದಲ್ಲಿ ಬಳಸಬಹುದಾಗಿದೆ. ಒಂದು ಬ್ಲಾಕ್ ತಯಾರಿಕೆಗೆ 10 ರು. ಮಿತವ್ಯಯ ವೆಚ್ಚ ತಗುಲಿದೆ ಎಂದು ವಿದ್ಯಾರ್ಥಿಗಳು ತಿಳಿಸಿದ್ದಾರೆ.

ನೂತನ ಪ್ರೀವಿಯಸ್ ಕಾಂಕ್ರೀಟ್ ಬ್ಲಾಕ್‌ನ್ನು(ಪಿಸಿಬಿ) ಅನ್ವೇಷಣೆ ಮಾಡಿದ ಸಿಎಂಆರ್ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಟೆಕ್ನಾಲಜಿ ವಿದ್ಯಾರ್ಥಿಗಳು.

WWW.ECONOMICTIMES.COM

THE ECONOMIC TIMES

This Pervious Concrete Can Absorb a Flood

Bharath.Joshi@timesgroup.com

Team of engineering students show new type of mix called pervious concrete that can reduce flooding

Bengaluru: Flooded neighbourhoods are a common sight in Bengaluru. That is because the drains outside homes are paved with concrete, which experts say causes rainwater runoff resulting in floods.

In fact, the BBMP is spending ₹800 crore to construct new storm-water drains and remodel existing ones using reinforced cement concrete (RCC). A team of civil engineering students has now come up with a new type of mix called pervious concrete, which allows rainwater to permeate, reducing flooding and helping groundwater recharge. Students developed a block of pervious concrete using their own mix proportion of water, cement and other aggregates.

In fact, the innovation by CMRIT students won first prize at Srishti 2017, a state-level competition for engineering students. Final year students Nandhini RT, Netravathi O, Danish Akhtar and Manoj GK were mentored by their teacher Preeti Jacob, who specialises in water resources. "Normal concrete is very impermeable. Because of that, we end up wasting precious rainfall. Also, the use of concrete in drains contributes to rising temperature," Nandhini said.

To demonstrate the effectiveness of the pervious concrete, the students ran a laboratory test recreating rainfall conditions. Water was poured on the pervious concrete block and a layer of soil taken from all five locations to study permeability. "During rainfall, if the bed of the stormwater drain is pervious, some water seeps down and the effect of flood is reduced. Use of this pervious concrete in the small drains can reduce flooding by 70%," said Jacob, assistant professor of Civil Engineering at CMRIT.

At ₹10 a block, this concrete is a cost effective solution for the city. Municipal commissioner N Manjunath Prasad said he would ask engineers to take a look at the concrete if students approach him. "The concern that the use of concrete in drains increases velocity of water is valid. But Bengaluru's drains also carry sewage. If this seeps through, the borewells may get contaminated," Prasad said, justifying the use of concrete in drains.

CMR students create special concrete to solve city's rain woes

Express Features

A group of civil engineering students from the CMR Institute of Technology have a solution for not just the water woes of the city, but also waterlogging during the monsoon.

The 'pervious concrete block' looks like an ordinary piece of brick at first glance. It is, however a special kind of concrete brick that is porous and with high permeability, made by these students.

"The concrete consists of coarse aggregate (a granular material made of gravel, crushed stone, cement and other materials) that has been treated for a period of 28 days. We used the coarse aggregate and mixed it with cement and did a compression test to understand its strength," says Danish Akthar, a student involved in the project.

Danish further says that unlike normal bricks, the materials used in their concrete mix do not have sand, giving the brick its special nature. "When you use sand, the pores in the concrete get mixed, thereby not giving it that distinct permeable nature," he adds. This type of concrete is mainly used in low-volume traffic pavements such as parking lots, footpaths etc, as the compressive strength is low.

When it rains, most areas in Bengaluru are flooded. However, if these areas use the pervious concrete block to make roads and footpaths, the problem of waterlogging will be reduced as all the water will run off and go down to the water table says Danish. "This water can replenish the ground water. Trees fall in the rain because their roots, starved of water, are weak... non-porous concrete slabs cover them," says Danish.

The students have already won the first prize at Srishti - 2017. "The special concrete is being used in a number of cities in the west, but it has not caught on in India," says Danish.

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ಈ ಸಿಮೆಂಟ್ ಬ್ಲಾಕ್‌ನಲ್ಲಿ ನೀರು ಇಂಗುತ್ತದೆ !

ಶಿಕ್ಷಣ ದಿಕ್ಕು

ಬೆಂಗಳೂರು: ಓಡುವ ನೀರನ್ನು ನಡೆಯುವಂತೆ ಮಾಡಿ, ನಡೆಯುವ ನೀರನ್ನು ನಿಲ್ಲುವಂತೆ ಮಾಡಿ, ನಿಂತ ನೀರನ್ನು ಇಂಗುವಂತೆ ಮಾಡಬೇಕೆಂಬು ಮಳೆನೀರು ಸಂಗ್ರಹ ಮೂಲನಿಯಮ. ಇದನ್ನು ಸಾಕಾರಗೊಳಿಸಲು ನಗರದ ಸಿಎಂಆರ್ ತಾಂತ್ರಿಕ ಕಾಲೇಜಿನ ವಿದ್ಯಾರ್ಥಿಗಳು ಯೋಜನೆಯೊಂದನ್ನು ಸಿದ್ಧಪಡಿಸಿದ್ದಾರೆ.

ಇದರ ಹೆಸರು ಪ್ರೀವಿಯಸ್ ಕಾಂಕ್ರಿಟ್ ಬ್ಲಾಕ್. ಈ ಬ್ಲಾಕ್ ಮೇಲೆ ಬಿದ್ದ ನೀರು ಸುಲಭವಾಗಿ ನೆಲದೊಳಗೆ ಇಂಗುತ್ತದೆ.

'ಆನ್‌ಲೈನ್‌ನಲ್ಲಿ ವಿಡಿಯೊ ನೋಡುತ್ತಿದ್ದಾಗ ವಿದೇಶಗಳಲ್ಲಿ ಡಾಂಬಾರು ರಸ್ತೆಗಳಲ್ಲಿ ಮಳೆನೀರು ಇಂಗುವ ತಂತ್ರಜ್ಞಾನ ಅಳವಡಿಸಿರುವುದು ತಿಳಿಯಿತು. ಅಂತಹ ತಂತ್ರಜ್ಞಾನ ಬಳಸಿ ಪ್ರಾಜೆಕ್ಟ್ ತಯಾರಿಸಲು ನಿರ್ಧರಿಸಿದೆವು. ಬ್ಲಾಕ್ ತಯಾರಿಸಲು 6 ಎಂ.ಎಂ.ಜೆಲ್ಲಿ ಮತ್ತು ಸಿಮೆಂಟ್ ಅನ್ನು ಮಾತ್ರ ಬಳಸಿದ್ದೇವೆ' ಎಂದು ಈ ತಂಡದಲ್ಲಿರುವ ವಿದ್ಯಾರ್ಥಿನಿ ಆರ್.ಟಿ.ನಂದಿನಿ ತಿಳಿಸಿದರು.

'ಇತ್ತೀಚೆಗೆ ಅಂತರ್ಜಲ ಮಟ್ಟ ಕುಸಿಯುತ್ತಿದೆ. ಇಂತಹ ಬ್ಲಾಕ್‌ಗಳನ್ನು ಪಾದಚಾರಿ ಮಾರ್ಗ, ವಾಹನ ನಿಲುಗಡೆ ಸ್ಥಳಗಳಲ್ಲಿ ಅಳವಡಿಸಿದಾಗ ನೀರು ಸರಾಗವಾಗಿ ಇಂಗುತ್ತದೆ. ನಗರದಲ್ಲಿ ಪ್ರವಾಹ ಉಂಟಾಗುವ ಭೀತಿಯೂ ಇರುವುದಿಲ್ಲ' ಎನ್ನುತ್ತಾರೆ ತಂಡದಲ್ಲಿನ ಮತ್ತೊರ್ವ ವಿದ್ಯಾರ್ಥಿ ದನೀಶ್ ಅಕ್ತರ್.

ಸಂಶೋಧಿತ ಸಿಮೆಂಟ್ ಬ್ಲಾಕ್ ಅನ್ನು ಪರೀಕ್ಷಿಸುತ್ತಿರುವ ವಿದ್ಯಾರ್ಥಿಗಳು. ಮಾರ್ಗದರ್ಶಕಿ ಪ್ರೀತಿ ಜೇಕಬ್ ಚಿತ್ರದಲ್ಲಿದ್ದಾರೆ

'25 ಬ್ಲಾಕ್‌ಗಳನ್ನು ತಯಾರಿಸಿ ಕಾಲೇಜಿನ ವಾಹನ ನಿಲುಗಡೆ ಸ್ಥಳದಲ್ಲಿ ಪರೀಕ್ಷಿಸಿದ್ದೇವೆ. ಬ್ಲಾಕ್‌ಗಳು 800 ಕೆ.ಜಿ. ಭಾರದ ಒತ್ತಡವನ್ನು ತಡೆಯುವ ಸಾಮರ್ಥ್ಯ ಹೊಂದಿವೆ. ಒಂದು ಬ್ಲಾಕ್ ತಯಾರಿಸಲು ₹ 10 ವೆಚ್ಚವಾಯಿತು' ಎಂದು ನಂದಿನಿ ಮಾಹಿತಿ ನೀಡಿದರು. ಪ್ರಾಜೆಕ್ಟ್‌ನ ತಂಡದಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳಾದ ಜಿ.ಕೆ.ಮನೋಜ್ ಮತ್ತು ಒ.ನೇತ್ರಾವತಿ ಇದ್ದರು.

WATER NO MORE A LUXURY Student's find ensures optimal water use with the help of soil moisture and temperature sensors

Here's an Intelligent Watering System for Urban Gardeners

Hrupuna.V@timesgroup.com

Bengaluru: Many Bengaluruans have been witness to those glory days when they could endlessly water their gardens and still have water left to wash their porches and cars. Some still continue to spend huge volumes of water on their greenery at a time when water is a scarce commodity. Now, an engineering student has come up with an innovation that allows the garden city to hold onto its gardens but water it sustainably.

Antony Jenitter, a sixth semester student of telecommunication engineering at CMR Institute of Technology, has built the system keeping farmers in mind but quickly adapted it to cater to urban needs, sensing an opportunity.

"Many people and places in the city are interested in or have greenery. However, they end up wasting a lot of water trying to maintain it," Jenitter said, giving the example of his college which has limited or no water supply on two days of the week and yet does not fail to generously water its plants with a hose on days there is water supply.

Several soil moisture and temperature sensors are placed at predefined spots and are connected to a control-ler. A tablet, in which green patches of the campus are mapped, uses the sensor data to graphically display the water levels. Connected to this are sprinklers which automatically turn on and off based on moisture requirements.

The system is customised to water with precision. "For instance, if there is a circular patch of greenery, the sprinkler will be modified to water only in that radius. This way, not an extra drop of water is wasted," Jenitter said.

Another problem he found was that individuals who grow plants on their balconies or indoors often let them dry when they travel or forget to water. To address this, he has built a compact indoor garden watering device which is the size of an average smartphone. "When attached to a pot, the device will ensure that it is watered optimally," he said.

After his idea was incubated at CMRIT, Jenitter decided to commercialise it. He registered it as the proprietor under the name Irrrigatronics in January this year. He has since sold 27 indoor gardening devices which are priced ₹200 and is working with prospective clients such as SAP Labs for the outdoor solution.

ON YOUR FINGERTIPS

The student has also built a compact indoor garden watering device, which is the size of an average smartphone

After his idea was incubated at CMRIT, Jenitter decided to commercialise it. He registered it as the proprietor under the name Irrrigatronics in January this year. He has since sold 27 indoor gardening devices which are priced ₹200 and is working with prospective clients such as SAP Labs for the outdoor solution, which is priced based on the area and other requirements.

Professor Kalaga Madhav, of the Department of Electronics and Communication Engineering at CMRIT, said Jenitter's system has also helped the college optimise its water usage in the gardens. "When you ask a gardener to use less water, it means nothing to him. However, a machine actually ensures you are neither over-watering nor under-watering," he said.

CMR Group of Institutions chairman and Rajya Sabha member KC Ramamurthy said that with the current unpredictable weather conditions, and failing monsoons, such innovations are crucial. "The government must take notice of such small-level frugal innovations and develop them to implement on a large-scale."

Water an idea! Engg student to help your garden grow better

SHRINIVASA M. | DC
BENGALURU, APRIL 29

Antony Jenitter, a student of CMR Institute of Technology has developed an Intelligent Watering System for farmers and gardeners

Young students develop prototypes of several unique projects, but fail to take them to the next level and exploit them commercially. But here is an exception. Meet Antony Jenitter, a sixth semester student of telecommunication engineering at CMR Institute of Technology, who has developed an Intelligent Watering System for farmers and gardeners and has already sold 27 systems to indoor gardening projects. He is now working with SAP Labs to develop outdoor solutions.

The system reduces wastage of water, employs the most technical method to water plants, gardens, farms etc, and uses water in the most conventional and sustainable way.

Jenitter has named the device Irrigatronics, which is an intelligent system ideal for small private gardens (including lawns, terrace gardens, etc.) and also large gardens, which are difficult to maintain.

Irrigatronics uses an integrated circuit or IC that monitors the soil moisture level constantly, reduces human intervention and uses optimum quantities of water. "It provides technical solutions and products to exploit water in an efficient way. With this, the problem of irregular watering of large gardens and inefficient use of water are tackled," he explained.

"The idea initially was to help farmers, who are in need of proper irrigation systems, and to avoid wastage of water. I had to drop the idea as the funding required was huge. I then realised that it could be implemented in urban areas to meet the water requirements of small gardens, kitchen gardens, pots etc. We are trying to implement the system at CMRIT," he said.

"The device saves anywhere between 65 and 75 percent of the water that you normally use with other, more conventional methods. It also improves the growth of plants. That is because when plants, crops and lawns are watered with smaller amounts of water over a longer period of time, they grow faster as it is the ideal condition for growth. It also helps contain weeds," he said.

Water crisis? He has solutions flowing in

Ayush Giri
mybangaloremirror
@timesgroup.com
TWEETS @BangaloreMIRROR

Karnataka is battling one of the worst droughts in recent years, and a city student has come up with a solution to solve the water crisis.

J Antony Jenitter, a third year BE telecommunications student from CMR Institute of Technology, Bengaluru, developed a project called Irrigatronics and has also registered it as a start-up initiative. Antony said, "I aim to provide technical solutions and products to exploit water usage in an efficient way to counter the problem of irregular and large-area gardening. The system monitors soil moisture content of plants with required sensors and automatically supplies water based on the requirements of the plants minimising any wastage, so every drop of water is used only when it is required", said Antony.

It is really inexpensive with the master control being priced at Rs 299 rupees and additional knobs @49. Antony also provides an App which enables users to keep track of the status of the plants in real time.

Around a year ago, he started working with four of his seniors, but eventually took it forward by himself with the help of his teachers. Antony claims his inspiration to contribute to the environment came after he visited his native place, Tirunelveli in Tamil Nadu. He believes that his technology can reduce the wastage of water by 80%.

His long-term ambition is to encourage people grow fruits and vegetables at their own homes while reducing wastage of water.

Moment of glory

- **Antony has developed a tool to reduce water usage, especially gardening**
- **It monitors soil moisture content and supplies water based on the need. And it's dirt cheap!**

Five VTU students chosen for Stanford varsity fellowship

SPECIAL CORRESPONDENT

BELAGAVI: Five students of Visvesvaraya Technological University have been selected for University Innovation Fellows (UIF) programme of the Stanford University, U.S.A.

According to a VTU release, the programme has been designed to empower the students' knowledge, skills and attitude and make a positive impact on the world economy.

As many as 169 students from four countries participated in the selection process. Samanth Mendke and Shriya Hukkeri from Gogte Institute of Technology, Belagavi; and Abhay Rangan V., Priyanka Srivastava, and Asher John Sathya from CMR Institute of Technology, Bengaluru, excelled in the selection process.

The fellows will be provided online training for six weeks on development and innovative projects aimed at bringing in a change in the university system. After the training, they will attend the annual UIF Silicon Valley Meet scheduled in U.S.A. in March.

VTU Vice-Chancellor Karisiddappa said the university had been encouraging international collaborations and interacting with globally reputed universities and organisations for collaborative research, exchange of faculty members and students to make value addition to their teaching and learning abilities.

CMR student for Google project

Bengaluru: CMR Institute of Technology student Ronak Jain has been selected for the prestigious Google Summer of Code (GSoC) programme 2017. Selected candidates get to work on a programming project with an open source organisation. Ronak will be part of an organisation called 'Performance Co-Pilot' and work there for three months. Ronak said, "It is a great honour to be selected for GSoC. It will help me hone my coding skills and be on par with international students. I would like to express my gratitude to my institution, CMR Institute of Technology and my parents."

CMRIT secures coveted A+ grade by NAAC

CMR Institute of Technology, Bengaluru joins elite group of nationally acclaimed colleges in engineering education by securing the coveted A+ grade by NAAC. This achievement is in recognition of high standards of teaching and learning practices, hi-tech infrastructure and placements, epitomising CMRIT as a premier institute globally. The accreditation results of institutions approved by the standing committee, after its meeting on March 28 have been released and 18 institutes from Karnataka are featured in the first cycle.

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epaper.newindianexpress.com/c/1856

THESE VEGANS 'PLANT' AN IDEA

Continued from Page 17

"It was going to be difficult as I loved ice-cream and curd rice. I also read up about the cruelty in the dairy industry," she says. Having quit her full-time job to take up activism, this environmentalist recently launched her brand The Happy Calf. "I used to earn well, so the decision wasn't easy. I now want to tell people how food can be the ultimate medicine. We should pay more to the farmer than to the doctor. I'm now working on a marathon where I'll be providing ragi mylk. I also make herb and garlic almond cheese, coconut mylk etc," she adds.

Another fervent vegan entrepreneur is 20-year-old Abhay Rangan, who manages to juggle university and his company together. A telecommunications student from CMRIT, this fiery lad has been an animal and human rights activist for over four years now. "I founded the Society for Animal Rights and Veganism (SARV) when I was 16. When I was 18, I started Veganarks, because I wanted to make plant-based alternatives accessible to everyone. Most vegan products here were priced much higher than their animal-product counterparts. I decided to do something about it. We manufacture peanut curd and almond milk, currently," he reveals.

After Abhay's parents turned vegan seven years ago on their wedding anniversary, he and his sister decided to do the same. "Animals deserve to live free from human-induced suffering — and the least we could do is to stop financing animal abusers," he says.

Coco Truce is another start-up that's tempting the taste-buds of city peeps with their vegan mayonnaise and cashew cheese. They're currently selling from home on weekends. Akriti, one of the founders, says, "I was motivated by my concerns for the environment and an e-mail I got explaining veganism to me. I researched to see if a vegan diet is enough health-wise and learned that it was." After attending a vegan potluck, her love for plant-based cooking increased. "We started putting posts on Instagram and then created a Facebook page to sell healthy and environment-friendly alternatives. We also want to support movements and people doing good work. In this manner, we will donate a part of our earnings every month to one organisation raising funds for a good cause," she reveals.

From left: Abhay, Priyanka and Asher

CITY STUDENT RECALLS HIS WEEK AT STANFORD

• ENS

Three city college students – Abhay Rangan, Asher John Sathya and Priyanka Srivastava – were selected for the University Innovation Fellows programme at Stanford College USA recently. The programme aims to empower students to become agents of change in their institutions.

After returning from a seven-day long programme, Abhay Rangan, a telecommunication engineering student at CMRIT, says, "It was a pretty brilliant experience. We got to go to the Google and Microsoft headquarters and Stanford University's Hasso Plattner Institute of Design. There was a lot of brainstorming and training on a number of topics such as design thinking, leadership and lean startups. The programme has built a lot of self-confidence."

During the programme, Abhay highlighted the discrepancies in the Indian education system. "We spoke about the challenges facing the country. We highlighted on how Indian education system emphasises on classroom learning rather than on practical methods of teaching and problem-solving. Our peers all just want to get a job," he says, adding, "Learning in a class is not only about sitting for 40 minutes or for fixed time. There are a number of other factors. We need to bring a reform in the education system. I have started to work on this goal in my own small way," he says.

Abhay has already started two organizations - a non-profit for animals' rights and a startup called Vegan Arce that aims to make "plant-based food more accessible to people"

Besides the three students from the city selected for the programme, there were two others from the Gogte Institute of Technology, Belgaum for the academic year 2016-17.

B'luru prof wins biotech award for new technique

Phani Pullela receives the award from prez Mukherjee

Prajeet Nair
@timesgroup.com

TWEETS@SuchithMirror

Dr Phani Kumar Pullela, professor at the CMR Institute of Technology was awarded with "Biotech Product, Process Development and Commercialization Award for year-2017" by president Pranab Mukherjee on Thursday.

This technology has cut down molecular infectious disease diagnosis costs significantly. This matrix-based nucleic acid extraction received project support from international granting agencies like FIND, Grand challenges Canada, Gates Foundation and also from domestic agencies like BIPP.

A semi-automatic and automatic product based on this technology is licensed and is already in clinical use.

Talking about the award he said, "There have been many students involved in the study. With our efforts, Infectious diseases like malaria, dengue, chikungunya, H1N1 can be diagnosed at a cheaper rate."

The merits of the project include it being cost-effective and its indigenous technology.

Dr Pullela is currently Professor of CMR Institute of Technology, Bangalore and motto of his research group is finding solutions for problems faced by Indian society. He and his students have won more than 60 awards.

From the President himself

Dr Phani Kumar Pullela, a professor at CMR Institute of Technology, recently received the Biotech Product and Process Development and Commercialization Awards, 2017 award for his work on the development of a matrix-based universal nucleic acid extraction system from President Pranab Mukherjee.

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ಇತ್ತೀಚೆಗಷ್ಟೇ ಅಂತ್ಯಗೊಂಡ ವಿಟಿಯು ಮಹಿಳಾ ಹಾಕಿ ಟೂರ್ನಿಯಲ್ಲಿ ರನ್ನರ್‌ಅಪ್ ಸ್ಥಾನ ಪಡೆದ ಸಿಎಂಆರ್ ಇನ್ಸ್‌ಟಿಟ್ಯೂಟ್ ಆಫ್ ಟೆಕ್ನಾಲಜಿ ಕಾಲೇಜು ತಂಡ.

SIMPLE SOLUTION? Pollution Control Board asks students to conduct further tests

Can Fly Ash Purify City's Dying Lakes?

Nirupama.V@timesgroup.com

Bengaluru: Eight students of CMR Institute of Technology here have won gold medal for their project on the use of fly ash to rid dying lakes of pollutants and restore their health. The recent Indian International Innovation Fair, held in the city, recognised their project as an out-of-the-box solution.

Their project offers a solution to two issues plaguing Bengaluru — overflowing plastic garbage and polluted lakes: fly ash can be used to treat Bengaluru's polluted lakes and it can be combined with plastic waste to manufacture flexible composite bricks.

The process can be useful in specific purposes such as treating factory effluent

Fly ash is a by-product of coal combustion generated by thermal power plants and cement factories. The fine grey particles transported by the wind and deposited in surrounding localities are known to cause or worsen respiratory disorders and make soil infertile.

Second- and third-year students from different departments — Nithin Kumar V, Pranav Bhat, Sudarshan MS, Gururaj R, Vinay Kumar BA, C J Anoop, Pavan R Reddy, Naren M — have collaborated on this project and won several accolades.

When Karnataka State Pollution Control Board chairman Lakshman inspected the dying Varthur lake last week, he interacted with the team. "He said they will consider using the method to treat the highly polluted waters of the lake and asked us to conduct further tests," said V Nithin Kumar, a second-year ECE student.

Students who worked on the project; (below) a fly-ash brick

MAY NOT BE PRACTICAL

While fly ash is a promising proposition, it may not be practical to implement

The idea was born around this time last year. During a chapter on water technology, students were looking for solutions to the city's polluted lakes. Kumar said, "It is known that fly ash can adsorb heavy metals and organic matter present in a solution." The team tested it with a sample of water from Bellandur lake and found that the brown/black water became clear and did not smell anymore.

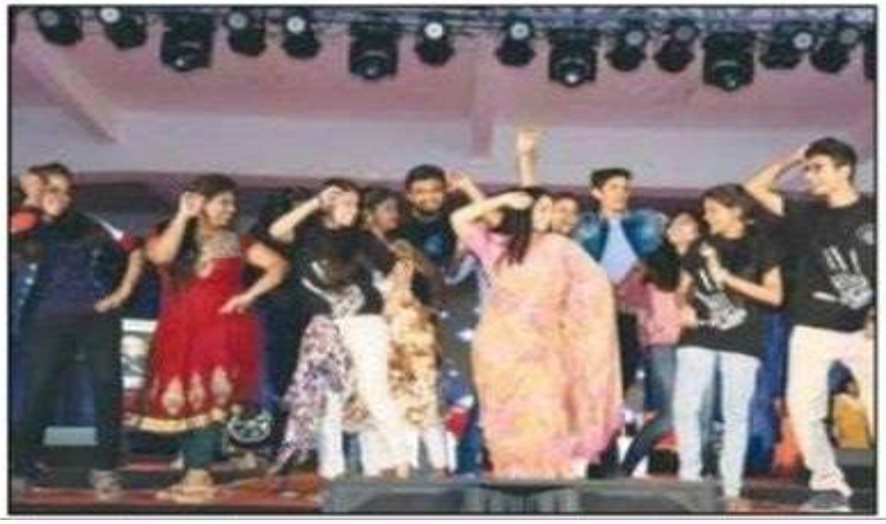
"About 100 ml of water can be clarified in five minutes by adding one-tenth fly ash. When speeded up using vacuum, it can be done in a matter of seconds," Kumar explained.

A simple filtration then separates the fly ash and other pollutants from the water. Combine this with waste plastic to make bricks and the result is a highly flexible brick that can better withstand tremors.

"These bricks can be used in non-critical constructions such as walls and temporary army camps. We hope to implement these ideas and take them to the market," said C J Anoop, a third-year student of Information Science.

While it is a promising proposition, it may not be practical to implement. Professor TV Ramachandra, Coordinator of Energy and Wetlands Research Group at IISc, while appreciating the work of the students, said, "as fly ash does not absorb all nutrient content, it may not be the right method of purification for large water bodies such as lakes. It can be useful in smaller and specific purposes such as treating effluents within a factory or in industry dry-cleaning."

The team has already signed an agreement with an apparel manufacturer to use this method to treat the effluents.

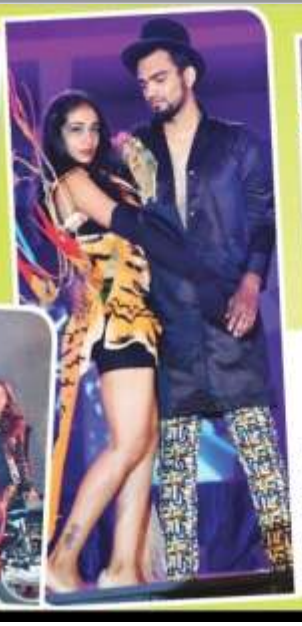


ನಗರದ ಸಿಎಂಆರ್ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಟೆಕ್ನಾಲಜಿ ಕಾಲೇಜಿನಲ್ಲಿ ನಡೆದ 'ಕಲ್ಚರ್–2017' ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ನಟಿ ರಮ್ಯಾ ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ನೃತ್ಯ ಮಾಡಿದರು.

SPY

RAMYA'S GIRLY MOMENT!

Kannada actor Ramya was spotted having quite a blast dancing with students at a fashion show in the city which was held at Cultura 2017, CMRIT annual festival.



ಸಿಎಂಆರ್ ಐಟಿಯಲ್ಲಿ ರಮ್ಯಾ ನೃತ್ಯಕಾಲ!

130 ಶಿಕ್ಷಣ ಸಂಸ್ಥೆಗಳು, 49 ಸ್ಪರ್ಧೆಗಳು, 12 ಸಾವಿರ ವಿದ್ಯಾರ್ಥಿಗಳು! ಸಿಎಂಆರ್ ಐಟಿ ಬಿಟೆಕ್‌ಎಲ್ ಕ್ಯಾಂಪಸ್ ನಲ್ಲಿ ನಡೆದ 'ಕಲ್ಚರ್' ವಾರ್ಷಿಕ ಸಾಂಸ್ಕೃತಿಕ ಹಬ್ಬದ ಹೈಲೈಟ್ ಇದು. ಏಕವ್ಯಕ್ತಿ ನೃತ್ಯ, ಸಮೂಹ ನೃತ್ಯ, ಮ್ಯಾಡ್ ಆ್ಯಡ್ಸ್, ರೋಬೋಟಿಕ್ಸ್ ಸೇರಿ ಹಲವು ಸಾಂಸ್ಕೃತಿಕ ಕಾರ್ಯಕ್ರಮಗಳು ವೇದಿಕೆಯ ಕಳೆ ಹೆಚ್ಚಿಸಿದವು. ಮೋಸ್ಟ್ ಎಂಬಂತೆ, ಮಾಜಿ ಸಂಸದೆ ಹಾಗೂ ಖ್ಯಾತ ನಟಿ ರಮ್ಯಾ ಭಾಗವಹಿಸಿ ಸ್ಟೆಪ್ಸ್ ಹಾಕಿದ್ದು ವಿದ್ಯಾರ್ಥಿಗಳ ಖುಷಿಗೆ ಪಾರವೇ ಇರಲಿಲ್ಲ. ಸಿಎಂಆರ್‌ಐಟಿ ಪ್ರಾಂಶುಪಾಲ ಡಾ.ಸಂಜಯ, 'ನಾವು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಧೈರ್ಯತೆ ತುಂಬಿಸುವ ಉದ್ದೇಶದಿಂದ ಈ ಕಾರ್ಯಕ್ರಮ ನಡೆಸುತ್ತೇವೆ. ಸಾವಿರಾರು ವಿದ್ಯಾರ್ಥಿಗಳು ಭಾಗವಹಿಸುವ ಮೂಲಕ ಕಮ್ಮಟ್ಟಿರುವ ಪ್ರತಿಭೆಗಳ ಅನಾವರಣ ಮಾಡಲು ಸಹಾಯಕಾರಿಯಾಗಿ ಎಂದು ಹರ್ಷ ವ್ಯಕ್ತಪಡಿಸಿದರು.

ಸಿಎಂಆರ್‌ಐಟಿ ವಿದ್ಯಾರ್ಥಿಗಳ 'ಫ್ಲೈಆ್ಯಷ್' ಪ್ರಾಜೆಕ್ಟ್‌ಗೆ ಪ್ರಶಸ್ತಿ

ಪ್ರಜಾವಾಣಿ ವಾರ್ತೆ

ಐಐಐಎಫ್ ಪ್ರಶಸ್ತಿಯೊಂದಿಗೆ ಸಿಎಂಆರ್‌ಐಟಿ ವಿದ್ಯಾರ್ಥಿಗಳ ತಂಡ

ಬೆಂಗಳೂರು: ನಗರದ ಸಿಎಂಆರ್ ತಾಂತ್ರಿಕ ವಿದ್ಯಾಲಯದ ವಿದ್ಯಾರ್ಥಿಗಳ 'ಫ್ಲೈಆ್ಯಷ್' ಪ್ರಾಜೆಕ್ಟ್‌ಗೆ 'ಇಂಡಿಯನ್ ಇಂಟರ್‌ನ್ಯಾಷನಲ್ ಇನ್ನೊವೇಷನ್ ಫೇರ್ 2016'ರ (ಐಐಐಎಫ್) ಸ್ವರ್ಣ ಪದಕ ಲಭಿಸಿದೆ.

ಕಂಠೀರವ ಸಭಾಂಗಣದಲ್ಲಿ ಇತ್ತೀಚೆಗೆ ಆಯೋಜಿಸಲಾಗಿದ್ದ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಪ್ರಾಜೆಕ್ಟ್‌ಅನ್ನು ಪ್ರಸ್ತುತಪಡಿಸಿದ್ದರು.

ಕೆರೆ ಶುದ್ಧೀಕರಣ ಮಾಡಿ, ಅದರಿಂದ ಉತ್ಪತ್ತಿಯಾಗುವ ತ್ಯಾಜ್ಯದಿಂದ ದೀರ್ಘಕಾಲ ಬಾಳಿಕೆ ಬರುವ ಇಟ್ಟಿಗೆ ನಿರ್ಮಾಣ ಮಾಡುವಂತಹ ತಂತ್ರಜ್ಞಾನವನ್ನು ಈ ವಿದ್ಯಾರ್ಥಿಗಳು ಅಭಿವೃದ್ಧಿಪಡಿಸಿದ್ದರು. ಕೈಗಾರಿಕೆಗಳಿಂದ ಆಗುವ ಜಲ ಮಾಲಿನ್ಯ ತಡೆಗೂ ಇದು ಸಹಕಾರಿಯಾಗಲಿದೆ.

ಪ್ರಣವ್, ಸುದರ್ಶನ್, ಗುರುರಾಜ್, ವಿನಯ್, ನಿತಿನ್, ರಾಹುಲ್, ಅನೂಪ್, ಪವನ್, ನರೇಶ್ ಪ್ರಾಜೆಕ್ಟ್ ಮಾಡಿದ ವಿದ್ಯಾರ್ಥಿಗಳು. ಪ್ರೊಫೆಸರ್‌ಗಳಾದ ಶ್ರೀನಿವಾಸ ರೆಡ್ಡಿ, ಕಾರ್ತಿಕ್ ಎಸ್.ಎಂ. ಅವರ ನೇತೃತ್ವದಲ್ಲಿ ಪ್ರಾಜೆಕ್ಟ್ ಸಿದ್ಧಪಡಿಸಿದ್ದರು.

ಪಿ.ಸಂತೋಷಮೂರ್ತಿ, ಮುರಳೀಧರ ರೆಡ್ಡಿ, ಫಣಿ ಕುಮಾರ್ ಪುಳೇಲಾ ಅವರು ಸಲಹೆಗಾರರಾಗಿದ್ದರು.

ವಿಶ್ವ ಪರಿಸರ ದಿನಾಚರಣೆ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಕೊಳಚೆ ನೀರು ಶುದ್ಧೀಕರಣ ಮಾಡುವ ವಿಧಾನ ಮತ್ತು ಅದರ ತ್ಯಾಜ್ಯದಿಂದ ಉತ್ಪಾದಿಸಿರುವ ಇಟ್ಟಿಗೆ ಪ್ರದರ್ಶಿಸುತ್ತಿರುವ ಸಿಎಂಆರ್‌ಐಟಿ ವಿದ್ಯಾರ್ಥಿಗಳು

ನೀರೂ ಶುದ್ಧ, ಇಟ್ಟಿಗೆಯೂ ಸಿದ್ಧ

ಪ್ರಜಾವಾಣಿ ವಾರ್ತೆ

ಬೆಂಗಳೂರು: ಬೆಳ್ಳಂದೂರು ಕೆರೆ ಶುದ್ಧೀಕರಣ ಮಾಡಿ, ಅದರಿಂದ ಉತ್ಪತ್ತಿಯಾಗುವ ತ್ಯಾಜ್ಯದಿಂದ ದೀರ್ಘಕಾಲಿಕ ಬಾಳಿಕೆ ಬರುವ ಇಟ್ಟಿಗೆ ನಿರ್ಮಾಣ ಮಾಡುವಂತಹ ತಂತ್ರಜ್ಞಾನವನ್ನು ಸಿಎಂಆರ್ ತಾಂತ್ರಿಕ ವಿದ್ಯಾಲಯದ ವಿದ್ಯಾರ್ಥಿಗಳು ಅಭಿವೃದ್ಧಿಪಡಿಸಿದ್ದಾರೆ.

ಇತ್ತೀಚೆಗೆ ಬೆಳ್ಳಂದೂರು ಕೆರೆ ಎಂದರೆ ಗಾಳಿಯಲ್ಲಿ ತೇಲಾಡುತ್ತಿದ್ದ ನೊರೆಯೇ ಕಣ್ಣ ಮುಂದೆ ಬರುತ್ತದೆ. ಕೆರೆ ಶುದ್ಧೀಕರಣಕ್ಕಾಗಿ ಬಿಬಿಎಂಪಿ, ಬೆಂಗಳೂರು ಜಲಮಂಡಳಿ, ರಾಜ್ಯ ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ, ಸರ್ಕಾರೇತರ ಸಂಘ ಸಂಸ್ಥೆಗಳು ಸಾಕಷ್ಟು ಪ್ರಯತ್ನ ನಡೆಸಿವೆ. ಈ ಮಧ್ಯೆ ವಿದ್ಯಾರ್ಥಿಗಳು ಕೊಳಚೆ ನೀರು ಶುದ್ಧೀಕರಣ ಮಾಡುವುದಷ್ಟೇ ಅಲ್ಲದೆ, ಅದರಿಂದ ಉತ್ಪತ್ತಿಯಾಗುವ ತ್ಯಾಜ್ಯವನ್ನೂ ಮರುಬಳಕೆ ಮಾಡಿದ್ದಾರೆ. ಕಂಠೀರವ ಒಳಾಂಗಣ ಕ್ರೀಡಾಂಗಣದಲ್ಲಿ ಭಾನುವಾರ ಏರ್ಪಡಿಸಿದ್ದ ವಿಶ್ವ ಪರಿಸರ ದಿನಾಚರಣೆ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳು ಮಾದರಿ ಪ್ರಸ್ತುತ ಪಡಿಸಿದರು.

ಕಾಲೇಜಿನ ರಸಾಯನ ವಿಜ್ಞಾನ ವಿಭಾಗದ ಪ್ರಾಧ್ಯಾಪಕ ಡಾ.ಪಿ.ಫಣಿ ಕುಮಾರ್ ನೇತೃತ್ವದಲ್ಲಿ ಎಂಜಿನಿಯರಿಂಗ್ ಮೊದಲ ವರ್ಷ ಓದುತ್ತಿರುವ ಪ್ರಣವ್, ನಿತಿನ್ ಕುಮಾರ್, ವಿನಯ್, ಸುದರ್ಶನ್ ಮತ್ತು ಗುರುರಾಜ್ ಸಂಶೋಧನೆ ನಡೆಸಿದವರು.

ಹೇಗೆ ಶುದ್ಧೀಕರಣ: ಕೊಳಚೆ ನೀರಿಗೆ ಹಾರುಬೂದಿ ಮತ್ತು ಇದ್ದಿಲು ಪುಡಿ ಮಿಶ್ರಣ ಮಾಡಿ ಫಿಲ್ಟರ್ ಮಾಡಿದರೆ ಸ್ವಚ್ಛ ನೀರು ಹೊರಬರುತ್ತದೆ. ಒಂದು ಲೀಟರ್ ನೀರಿಗೆ 250ರಿಂದ 300 ಗ್ರಾಂ ಪುಡಿ ಮಿಶ್ರಣ ಮಾಡಬೇಕು. ಶುದ್ಧ ನೀರನ್ನು ಕೆರೆಗೆ ಬಿಡಬಹುದು ಇಲ್ಲವೇ ಅಂತರ್ಜಲಕ್ಕೆ ಮರುಪೂರಣ ಮಾಡಬಹುದು.

ಆದರೆ, ಈ ರೀತಿ ಶುದ್ಧೀಕರಣ ಮಾಡುವುದರಿಂದ ನೀರಿನಲ್ಲಿದ್ದ ಮೂಲ ತ್ಯಾಜ್ಯ ಮತ್ತು ಶುದ್ಧೀಕರಣಕ್ಕೆ ಬಳಸಲಾದ ಹಾರುಬೂದಿ ತ್ಯಾಜ್ಯ ಹಾಗೂ ಅದಕ್ಕೆ ಪ್ಲಾಸ್ಟಿಕ್ ಮಿಶ್ರಣ ಮಾಡಿ ಇಟ್ಟಿಗೆ ಮತ್ತು ಪಾದಚಾರಿ ಮಾರ್ಗಗಳಲ್ಲಿ ಹಾಕುವಂತಹ ಟೈಲ್‌ಗಳನ್ನು ತಯಾರಿಸಲಾಗಿದೆ. ಪ್ರತಿ 10 ಲೀಟರ್ ನೀರು ಶುದ್ಧೀಕರಣದಿಂದ ಉತ್ಪತ್ತಿಯಾಗುವ ತ್ಯಾಜ್ಯದಿಂದ ಒಂದು ಇಟ್ಟಿಗೆ ಸಿದ್ಧವಾಗುತ್ತದೆ. ಈ ಇಟ್ಟಿಗೆ ಕನಿಷ್ಠ 50 ವರ್ಷ ಬಾಳಿಕೆ ಬರುತ್ತದೆ ಎಂಬುದು ವಿದ್ಯಾರ್ಥಿಗಳ ಅನಿಸಿಕೆ.

ಸಹಾಯ ಬೇಕಿದೆ: 'ಬೆಳ್ಳಂದೂರು ಕೆರೆಯಲ್ಲಿ ನೊರೆ ಮತ್ತು ತ್ಯಾಜ್ಯ ನೀರಿನಲ್ಲಿ ಬೆಂಕಿ ಹೊತ್ತಿಕೊಂಡ ಪ್ರಕರಣದ ನಂತರ ಕೊಳಚೆ ನೀರು ಶುದ್ಧೀಕರಣದ ಮಹತ್ವವನ್ನು ಮತ್ತಷ್ಟು ಹೆಚ್ಚು ಮಾಡಿದೆ. ಅದ್ದರಿಂದ ಈ ಕೆರೆಯ ನೀರನ್ನೇ ಶುದ್ಧೀಕರಣ ಮಾಡಬೇಕು ಎಂಬ ಉದ್ದೇಶದೊಂದಿಗೆ ಸಂಶೋಧನೆ ಕೈಗೊಳ್ಳಲಾಗಿತ್ತು' ಎಂದು ಡಾ. ಫಣಿ ಹೇಳಿದರು.

ರಾಯಚೂರು ಶಾಖೋತ್ಪನ್ನ ವಿದ್ಯುತ್ ಕೇಂದ್ರದಿಂದ ಪ್ರತಿ ವರ್ಷ ಸುಮಾರು 80 ಲಕ್ಷ ಟನ್ ಹಾರುಬೂದಿ ಉತ್ಪತ್ತಿಯಾಗುತ್ತದೆ. ಅದನ್ನೇ ಬಳಸಿ ಇಲ್ಲಿ ನೀರು ಶುದ್ಧೀಕರಣ ಮಾಡಬಹುದು ಮತ್ತು ತದನಂತರ ಉಂಟಾಗುವ ತ್ಯಾಜ್ಯದಿಂದ ಇಟ್ಟಿಗೆ ನಿರ್ಮಾಣ ಆಗುತ್ತದೆ. ಹಾರುಬೂದಿ ಮತ್ತು ತ್ಯಾಜ್ಯ ನೀರು ಎರಡೂ ಸಮಸ್ಯೆಗಳಿಗೆ ಪರಿಹಾರ ಕಲ್ಪಿಸಿದಂತಾಗುತ್ತದೆ. ಇದರಿಂದ ಆರೋಗ್ಯಕ್ಕೆ ಯಾವುದೇ ತೊಂದರೆ ಇಲ್ಲ. ಒಳಚರಂಡಿ, ಮ್ಯಾನ್‌ಹೋಲ್, ಪಾದಚಾರಿ ಮಾರ್ಗ ಹೀಗೆ ಸರ್ಕಾರದ ಕಾಮಗಾರಿಗಳಲ್ಲಿ ಇಂತಹ ಇಟ್ಟಿಗೆ ಬಳಸಬಹುದು ಎಂದು ಅವರು ಸಲಹೆ ನೀಡಿದರು.

ಸದ್ಯ ಈ ಸಂಶೋಧನೆಗೆ ನಮ್ಮ ಕೈಯಿಂದಲೇ ₹ 80 ಸಾವಿರ ಖರ್ಚು ಮಾಡಿದ್ದೇವೆ. ಸರ್ಕಾರ ₹ 20 ಲಕ್ಷ ನೀಡಿದರೆ ದೊಡ್ಡ ಪ್ರಮಾಣದಲ್ಲಿ ಇದನ್ನು ಹೇಗೆ ಜಾರಿ ಮಾಡಬಹುದು ಎಂದು ಮತ್ತಷ್ಟು ಸಂಶೋಧನೆ ನಡೆಸಿ ವರದಿ ನೀಡುತ್ತೇವೆ ಎಂದು ಅವರು ಹೇಳಿದರು.

Bellandur Lake gets a lifeline

Four students from CMR Institute of Technology have come up with a prize-winning solution to clean the polluted lake. Here's why it might just work

Project.Nair
@timesgroup.com
TWEETS @projectsMirror

It's a new year, but the woes of Bellandur Lake have not changed. In the news for all the wrong reasons, the lake, which covers 148 km2 catchment area with a length of 3.6 km and 1.4 km width, receives most of the sewage water from Bengaluru. The accumulation of waste of 30 to 40 years and a lack of drainage systems has led to its current sorry state. Four students from CMR Institute of Technology have proposed a solution to clean the lake by developing a 'field-deployable technique to purify Bellandur lake water.' Their project was awarded first place in the 'clean and green Bangalorean' category of Ideas for India 2015, a competition conducted by a Universe Health, Education and Environment Trust, a city NGO. The year-long project will be funded by the Universe Trust organisation.

First-year students Shashank Javgal, Vijeth Devaraj, Avinash Kumar and Nithin Kumar came up with the idea after realising that the existing approach to tackling the lake's pollution may not work. So far, the government methods attempted for the purification of Bellandur Lake have not been scalable in nature or are too expensive to implement, the students believe. These include cleaning the weed leaves from the lake and plans for implementation of sewage plants to curb pollution from industries.

In their method, the students hypothesised that with rapid industrialisation and urbanisation in Bengaluru, they needed out of the box thinking to purify the lake. Technically, Bellandur Lake water contains two kinds of pollutants — industrial and domestic. The students' work was to purify these, while keeping in mind the scalability and cost. According to Prof (Dr) Phani Kumar Pullela, one of the mentors of the students, as part of their plan, first, they will "pump 10,000 litres of water from the lake using a regular water pump". This will be purified in a water purification plant using a multimetal catalyst (fly ash), which they will get "for no cost from different thermal power plants in Karnataka which will settle down the pollutants". Then, the purified water will be pumped back into the lake.

> The plan is to pump out 10,000 ltr every day and purify the whole lake in three years. Bellandur Lake will be pollution-free within five years
> — DR PULLELA

The plan is to pump-out 10,000 litres every day and eventually purify the whole lake in three years. By the time the lake's surface water gets purified, the ground level of water will also improve and Bellandur Lake will be pollution-free within five years, they hypothesise. In the next step, the pollutants will be taken to a solid waste treatment plant in the outskirts of the city to be oxidised and released into the atmosphere as gases. According to the Dr Pullela, "We need the government's help in taking these pollutants out of the city and getting this thing done." The proposed project targets purifying Bellandur lake water to a typical ground water or canal water level purity. They have so far conducted experiments using 50 gm of fly ash and purified one litre of water within a minute.

Dr Pullela believes the idea is workable because it cleans the contaminated water on the surface, which will eventually lead to the ground level water also being purified. "It won't happen overnight, but eventually the entire lake will be purified," he says. "We have sent samples of the purified water taken from Bellandur Lake to Robustmaterials Pvt. Ltd, which is an analytical service laboratory." H Mallesha, Director of Robustmaterial is also optimistic. "The idea is doable and can be performed on a large scale. The test reports will be submitted to the concerned government departments soon."

The concern, however, is getting permissions and funds to establish a plant near Bellandur Lake where they can purify the contaminated water. Dr Pullela believes once the project gets a heads-up by the government, they can come-up with plans on where to set up the plant. Environmentalist AN Yellappa Reddy raises another point. "What about the air pollution which will be caused by oxidising the pollutants?" But the Dr Pullela has an answer to that. "The pollution from the oxidisation will be only 1 per cent of the current pollution levels of Bellandur Lake."

From left: Vijeth Devaraj, Nithin Kumar, Sashank Javgal and Avinash Kumar

City College Project Claims International Glory

A team of eight students devise technique to purify lake water polluted by industrial waste using fly ash

Akhila Damodaran

CMR Institute of Technology's project on the use of fly ash to treat industrially polluted water or waterbodies like Bellandur lake or Varthur lake won a gold medal at the Indian International Innovation Fair 2016 recently.

The team of eight students from second and third year of Electronics and Communication Engineering - Nithin Kumar V, Pranav Bhat, Sudarshan Sharma, Vinay Kumar, Gururaj R, Anoop P J, Pawan R and Naren M also won a special recognition medal from the Portuguese Government for "Contribution to Innovation".

The students collected the water sample from a local drainage for their experiment. Nithin explains, "We took a sample of 100 ml of water in a beaker and mixed it with 10 gm of fly ash. We then filter it with the Whatman filter paper. What is collected is odourless and colourless. It filters the organic matter and other suspended particles."

He adds, "Last year, Prof Phani Kumar Pullela was talking about cleaning the Ganga river. That is how we got the idea about Bellandur lake. There were many news reports making the rounds about the pollution of the lake".

Kesava Rao from the Department of Chemical Engineering, Indian Institute of Science says, "Fly ash can take up some of the pollutants, but it may also release some toxic substances such as heavy metals into the water. Using Whatman filter paper to treat large quantities of water may turn out to be quite expensive."

The students say that the fly ash are the waste from the thermal power. Vinay Kumar says, "When left accumulated for a long time, the heavy metals are absorbed by the earth. This treatment removes organic pollutants and removes the stink. It restores the water to canal grade - that can be used for agricultural purposes. It can also be used for drinking after the RO treatment." The team is in talks with the Karnataka Pollution Control Board to make it a large scale project that can help purify the Bellandur and Varthur lakes.

Nithin adds, "They have asked us to do more testings with a particular agency that they suggested. If the results are proven, they will approve the project." Ask how long will it take to purify the lakes, they say it depends on the size of the plant that is set up near the lake but approximately it can take about two years. Nithin says, "A 100 ml of water can be purified in five minutes without applying any pressure or vacuum."

> **This treatment removes organic pollutants and removes the stink. It restores the water to canal grade**
> — Vinay Kumar, Student, CMRIT

Also, the team claims that the waste collected in the filter paper can be used to make bricks.

"The polymer plastic can be converted to bricks. Adding fly ash can reduce the heat. These can be used to lay pavements and roads."

(From left) A student with the model and students posing with their medal

Students' gadget may help cops change traffic lights with remote

BENGALURU: Students at CMR Institute of Technology have developed a prototype of a handheld device (in pic) that can be used by the police to wirelessly control traffic lights.

The device has not yet been demonstrated to the traffic police as it is getting final touches. It will be soon tested at a traffic junction.

"The wireless traffic control device was originally developed by our seniors, but we have fine-tuned it and will hopefully put it to full use soon," said Aishwarya C, a third year ECE student who is part of a six-member team that has worked on improving the device.

Regular traffic lights are controlled by means of a switchboard that requires policemen to be near it. "But by providing a wireless handheld device, the policeman can control the traffic lights even from far away," said Aishwarya.

The remote control device has all the features of a traffic switchboard and more. It has a password to access the remote device, an automatic and manual control for traffic lights, range detector which automatically switches control to automatic mode when the policeman goes out of range.

The remote is most useful during emergency. For example, when a policeman wants to make way for an ambulance stuck in traffic, the remote will make the job simpler and faster, said Aishwarya. Though it is only a working prototype, more features can be added to it.

Mohammed M A, inspector, Electronics City traffic police station, is all for the remote control device. "A traffic policeman has to attend to a number of emergencies away from his booth like cars parked illegally on the footpath, while the signal switches are located at the traffic booth. In such cases, he has to control traffic and also attend to such duties. The hand-held device will help in such situations," he said.

DH News Service

IN JUST 20 DAYS

City Students Build Low-cost 3D Printer by Sheer Accident

Engineering students develop printer after their efforts to produce biodiesel failed

TOGETHER WE CAN: (from left) Akhil MS, Adarsha M, Amar Sale and Anish SA with their invention

N Narasimha Murthy

Bharath.Joshi@timesgroup.com

Bengaluru: A few planks of wood, a circuit board, a stepper motor, a projector and a beaker. Add mechanical engineering to the list and 20 days of hard work by four determined students and the final produce is a low-cost 3D printer.

Akhil MS, Adarsha M, Anish SA and Amar Sale, the 20-year-old, third-year mechanical engineering students from CMR Institute of Technology (CMRIT), built the 3D printer for a state-level exhibition quite by accident. Their original project to produce biodiesel failed and they tinkered a Plan B in just 20 days. The device cost them Rs 43,000, less than a fourth of a branded 3-D printer's price in the marketplace.

Under the guidance of their professor Sagar M Baligidad, the boys tinkered at a makerspace to come up with the 6-kg printer that works on digital light processing (DLP). Conventional 3D printers work on the fused deposition modelling (FDM) technology. "FDM printers are known to have low accuracy and bulky. Here, we use ultraviolet light from a projector for printing," Akhil pointed out.

Models are first designed in the form of layers on a computer-aided design software. "Each layer is then separately projected onto the liquid resin and the projected area gets solidified. This is done for each layer," Anish explained. This approach prints models at a third of the time conventional printers take, the inventors said.

After overcoming hurdles such as a circuit board crash and a non-responsive motor, the 3D printer competed with other projects at a national-level competition in MVJ College of Engineering in April, winning a cash prize.

CREATIVE COST-CUTTING

It's a very innovative and creative way of reducing cost. It can be a game-changer, something government funding agencies can support

TARUN KUMAR
research scholar at IISc's Centre for Product Design and Manufacturing

"It's a very innovative and creative way of reducing cost," said Tarun Kumar, a research scholar at IISc's Centre for Product Design and Manufacturing, who judged the entries at the competition the 3D printer entered. "It can be a game-changer, something government funding agencies can support."

Going forward, the team wants to further improve the printer as a final-year project.

Surendranath Reddy, cofounder of Chennai-based Redd, one of the pioneers of low-cost 3D printing, hailed the effort while pointing out a common mistake students make. "Students overlook operational, marketing and retailing costs. To retail a 3D printer at the same price for which it was built is a challenge," he said.

City students show the way in soldier rescue

Develop a prototype of a radar system that could locate humans buried in avalanche

Aparna Anil
Aparna.anil@timesgroup.com

TWEETS @AparnaMIRROR

We haven't forgotten Lance Naik Hanamanthappa Koppad and the nine others of the 19 Madras Regiment, who lost their lives last February, after an avalanche hit an Army camp at the Siachen glacier.

Would it have been possible to save these lives if we had a better system to detect soldiers trapped under snow? This was the question that prompted four students from the CMR Institute of Technology to think of alternatives to the existing deep penetration radar used.

As part of their academic project, four students from the institute, Sagorika T Samanta, Bhavini Purohit, Sandhya S and Sakshi Ranjan, designed a prototype of a radar system that can be an alternative to the existing mechanisms.

Deep penetration radars, capable of detecting metallic objects, were used by the rescue team to detect the soldiers who were trapped under layers of snow. As the one important purpose of the project was to facilitate a method to locate soldiers trapped in snow faster, they have named their project 'Khoji for fauji'.

"We lost 10 of our brave soldiers because it took almost a week with conventional methods for the rescue operation. The most time-consuming part of the process was to locate our soldiers buried by the avalanche," says Bhavini.

Looking for a solution that is robust (to sustain itself in conditions created after an avalanche), contactless, and that can detect the presence of a human body buried under almost 30ft of snow; they developed a prototype that detects a human presence under the snow by using the dielectric constant [the ratio of permittivity of a substance to the permittivity of free space] of the human body.

"The device uses ultrasonic sensors. We get the dielectric constant value of whichever organism is buried under snow from the scattered waves. This value will be compared against the human dielectric constant value stored in the device," says Bhavini. The device, with Frequency Modulated Continuous Wave [FMCW] radar as its backbone, is convenient for shallow range detection as well. The radar can be mounted on helicopters which can come down to an elevation of 100 metres. "All the existing ground penetrating radars do not often give good results because they depend on metal or thermal sensors. What happens is if the body is frozen or there is no metal presence on the buried individual, these sensors will not work as expected. That is what prompted us to think of alternatives," says Sagarika, adding that their proposed solution is a device that is not dependent on metal or temperature.

"We had to do a lot of research before actually starting the project. We started our work around late February and completed it by early April," she says.

"The setting and resources required to create the actual device is not something we as students can meet," she says. We would be glad to take it forward if there is somebody prepared to fund us, she adds.

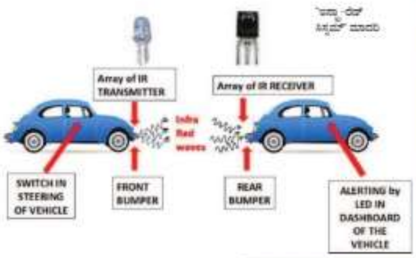
The prototype students developed

The students also thanked their mentor, Abhishek Javali, who is an assistant professor at the institute. "At a certain point of time we were not getting the accurate result, as expected. He guided us at such points," they say.

"Now what the students have created is just a prototype. Being students, it would not be possible for them to create the real device as the infrastructure required is very expensive," says the professor, who adds that maybe institutions like DRDO or ISRO can go on and build it.

"The main work involved in the project was coding, that was done at Matlab. Most of the work was done by students, and I was just giving them ideas," he says.

ಶಬ್ದ ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣಕ್ಕೆ 'ಇನ್‌ಫ್ರಾರೆಡ್ ಸಿಸ್ಟಮ್'



ಬೆಂಗಳೂರಿಗರ ಪಾಲಿಗೆ ದೊಡ್ಡ ಕಿರಿಕಿರಿ ಎನಿಸಿರುವ ಹಾರ್ನ್‌ಗಳಿಗೆ ಕಡಿವಾಣ ಹಾಕಲು ವಿದ್ಯಾರ್ಥಿಗಳಿಬ್ಬರೂ ಹೊಸ ತಂತ್ರವೊಂದನ್ನು ಅಭಿವೃದ್ಧಿಪಡಿಸಿದ್ದಾರೆ. ಅಗತ್ಯವೇ ತಾನೇ ಎಲ್ಲ ಸಂಶೋಧನೆಗಳ ತಾಯಿ

ಸಂತೋಷ ಜಿಗಳಿಕೊಪ್ಪ

[illegible]


ಸಲೋನಿ


ವಿಕಾಸ್

ಬಸ್‌ನಲ್ಲಿ ಹೊಳೆದ ಆಲೋಚನೆ

[illegible]

ಏನಿದು ಇನ್ ಫ್ರಾರೆಡ್ ಸಿಸ್ಟಮ್?

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'ಇನ್ ಫ್ರಾರೆಡ್ ಸಿಸ್ಟಮ್' ಉಪಯೋಗ

[illegible]

A sound solution to cacophonous vehicle horns

Niveditha Jain

BENGALURU, DHNS: Honking is one of the major contributors to traffic noise pollution. To combat it, two students from CMR Institute of Technology have now come up with a solution.

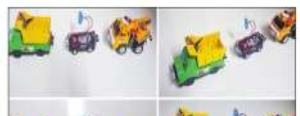
'Application of Infrared-LEDs (photodiodes) in vehicles,' a solution developed by Vikas Jangid and Saloni Sarkar, third year engineering students, mainly uses infrared (IR) transmitter-receiver pair system, colour LED lights and a switch connection, all fitted in the vehicle.

There is, however, a glitch: it works only if the vehicle in the front is also fitted with a IR transmitter-receiver.

Saloni said, "IR transmitter will be fitted on the front bumper of a vehicle, a car for instance. A switch is provided near the horn on the steering wheel, besides a LED light on the dash board. An array of IR receivers will be fitted on the rear bumper. Whenever the driver in the car switches on the connection, the transmitter emits IR rays which will be detected by the IR receiver fitted on the rear bumper of the vehicle in front. Once the signals are received, the LED lights blink, indicating that there is a vehicle behind, trying to overtake."

She said that the blinking LED lights alert the driver, thus replacing horns and reducing noise pollution. The students said that the system works for car, truck or any four-wheeler.

Jangid said that he and Saloni commute every day from Marathahalli to ITPL to reach college. "We noticed constant honking on the roads, adding to the stress and chaos," he said. They started developing prototypes in July 2016 and took three weeks to complete, Jangid said. The two plan to meet officials of the Karnataka State Pollution Control Board to give a presentation on their work.



(Above)Prototypes of the LED alert system developed by two engineering students to replace cacophonous horns in vehicles. (Left) LEDs that glow to alert drivers of vehicles in the front, about those coming from behind.

Students drive change, come up with smart replacement for blaring horns

Sreemoyee.Chatterjee@timesgroup.com

Bengaluru: Despite awareness campaigns and health warnings issued by doctors, deafening traffic continues to shatter Bengaluru's peace. Having been at the receiving end for long, two engineering students have devised a solution to curb the honking menace — a smart device which can be used instead of horns.

CRAVING FOR SILENCE: A man drowns out the cacophony of vehicles with headphones. (Right) Vikas Jangid and Saloni Sarkar have developed an infra-red transmitter to reduce traffic-related noise

It took Vikas Jangid and Saloni Sarkar three weeks to create the infra-red transmitter. The third-year students of electrical and electronics engineering from CMR Institute of Technology (CMRIT) were helped by their mentor Dr Shyamsundar Hegde. The device is expected to reduce traffic-related noise pollution by 95%-99%.

"Pressure horns can be replaced by the transmitter, which will allow an LED light placed in the vehicle's dashboard to glow. This will alert the driver of the vehicle in front about the presence of the car behind, eliminated the need for a horn and automatically bringing down noise pollution levels," said Vikas.

Elaborating how the device functions, Saloni said: "A pair of infra-red (IR) receivers will be fitted in the front and rear bumpers of the vehicle and a switch will installed in the steering wheel instead of a horn. When a driver presses the switch, infra-red rays will be emitted and detected by the IR receiver of the vehicle in front, lighting up the LED. This will alert the driver about the vehicle at the back."

Ask the students what prompted them to develop the transmitter and pat comes the reply: "On our way to college, we are invariably caught up in traffic. Mindless honking is a big put-off and we felt the need to come up with an answer. IR detectors can also sense the type of vehicle behind — LED lights of different colours will indicate the presence of different vehicles. We are in the process of developing an alarm system which can be used in congested parking areas or while reversing a vehicle. A buzzer can also be fitted, which is only audible inside the vehicle," they said.

DEVICE IN A NUTSHELL

- Can reduce traffic-related noise pollution by 95%-99%
- Will help reduce possibility of hearing impairment, hypertension and other noise-related ailments
- Installation is very cheap (around Rs 300) and it is easy to use
- Can be implemented on a large scale in short period of time

WILL TALK TO KSPCB, AUTOMOBILE COS

We studied infra-red radiations at length and decided to create a device which works on the same principle. We will talk to Karnataka State Pollution Control Board (KSPCB) about the possibility of installing it in existing vehicles and approach automobile companies to discuss if the device can be fixed in new vehicles. It is high time citizens act responsibly in order to curb noise pollution

Vikas Jangid | EEE STUDENT, CMRIT

The driver at the wheel behind you knows the signal is red, yet he honks incessantly. The city has very silent zones, mostly because the crackdown on high-decibel honking has been abysmal. Over the next week, **TOI**, through its **No Honking campaign**, will examine how this menace is ruining our peace of mind and affecting our health. Tell us how to tackle this noise pollution, steps the authorities should take and how not to honk.

WhatsApp us **7349282010**

A metal bird that can go sniffing for danger

CMRIT students develop flapping air vehicle prototype that looks like a bird, can fly for 10 minutes at a time

Prajeet Nair
@timesgroup.com
TWEETS @PrajeetnMirror

Ornithopters have substantial advantages over traditional vehicles in that they are more efficient

A group of students from CMR Institute of Technology (CMRIT) has developed an ornithopter – a micro air vehicle (MAV) or a biplane (because it has four flapping wings) – which can be sent inside chemical factories at times of hazard, and can also be used to check security in border areas.

Although an ornithopter has a wide range of military, surveillance, and search-and-rescue applications, its development has been lagging due to the complexity of the design and the unsteady aerodynamic forces of the flapping wings.

According to the students' mentor Prof Sagar MB, "The development of an MAV is complicated and it involves a lightweight design with power transmission, flight controls, low Reynolds number, and energy supply. Ornithopters are gaining popularity for certain applications because flapping can provide more agility and manoeuvrability at low speeds." He said the device generated by students can fly for 10 minutes and uses a Li-polymer rechargeable battery, which could be recharged fully within 15 minutes.

The professor said this was a prototype, so they used this battery but for a bigger project, they could increase the size of the battery. The device can also be charged with a laptop and its overall cost is around Rs 4,000. Ornithopters have substantial advantages over traditional vehicles in that they are more efficient, robust, emit lesser noise and have a higher efficiency at smaller scales.

> **Ornithopters are gaining popularity for certain applications because flapping can provide more agility**
> – Prof Sagar MB

Lohith V, a VI-semester mechanical engineering student and member of the research team, said, "The main objective of this work is to build an ornithopter with very less wing loading, which can be used for surveillance purposes. It took us more than a year to develop the device and now we are looking for possibilities to make it more productive."

The flapping patterns of flying creatures consist of a flap or stroke and rotation or twisting of the wing that can be divided into two types of flapping wing mechanisms: active and passive. An active mechanism is generated by actively rotating the wing to generate an angle of attack during each stroke.

Sagar explained that the function of the flapping wing mechanism is to convert the motor's rotary motion into a flapping motion. It is the most important component of the MAV and much of the research focuses on the many different designs available.

The group of students decided to build four-winged MAVs for maximum amplitude between two wings. The method involves two counter-rotating gears, spinning perpendicular to the forward movement of the MAV.

ಪ್ರಜಾವಾಣಿ ಶನಿವಾರ • ಸೆಪ್ಟೆಂಬರ್ 10, 2016

ಸ್ಟ್ಯಾನ್‌ಫರ್ಡ್ ವಿ.ವಿ ತರಬೇತಿ ಸಿಎಂಆರ್ ವಿದ್ಯಾರ್ಥಿಗಳು ಆಯ್ಕೆ

ಪ್ರಜಾವಾಣಿ ವಾರ್ತೆ

ಬೆಂಗಳೂರು: ಅಮೆರಿಕದ ಸ್ಟ್ಯಾನ್‌ಫರ್ಡ್ ವಿಶ್ವವಿದ್ಯಾಲಯದಲ್ಲಿ ನಡೆಯುವ ಸಂಶೋಧನೆ ಹಾಗೂ ಉದ್ಯಮಶೀಲ ತರಬೇತಿ ಕಾರ್ಯಕ್ರಮಕ್ಕೆ ನಗರದ ಸಿಎಂಆರ್ ತಾಂತ್ರಿಕ ವಿದ್ಯಾಲಯದ ವಿದ್ಯಾರ್ಥಿಗಳು ಆಯ್ಕೆಯಾಗಿದ್ದಾರೆ.

ಆಪರ್, ಪ್ರಿಯಾಂಕಾ ಶ್ರೀವಾಸ್ತವ ಹಾಗೂ ಅಭಯ್ ರಂಗನ್ ಆಯ್ಕೆಯಾದ ವಿದ್ಯಾರ್ಥಿಗಳು.

ದೇಶದಾದ್ಯಂತ 20 ವಿದ್ಯಾರ್ಥಿಗಳು ತರಬೇತಿಗೆ ಆಯ್ಕೆಯಾಗಿದ್ದು, ಇವರಿಗೆ ₹2.64 ಲಕ್ಷ ವಿದ್ಯಾರ್ಥಿ ವೇತನ ಸಿಗಲಿದೆ. ಅಲ್ಲದೇ ಗೂಗಲ್ ಕಂಪೆನಿಯಲ್ಲಿ ತರಬೇತಿ ಪಡೆಯಲಿದ್ದಾರೆ.

ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ವ್ಯಾಂಕುವಾಲ ಡಾ.ಸಂಜಯ್ ಬೆಟ್ಟಿಸ್, ಉವವ್ಯಾಂಕುವಾಲ ಡಾ.ನರಸಿಂಹಮೂರ್ತಿ, ವ್ಯಾಧ್ಯಾಪಕ ಡಾ ಫಣಿಕುಮಾರ್ ಇದ್ದಾರೆ

ವಿದ್ಯಾರ್ಥಿವೇತನಕ್ಕೆ ಆಯ್ಕೆಯಾದ ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ವೀರೇಂದ್ರ ಗುಪ್ತ, ಸಿ.ಎಂ.ಆರ್.ಐ.ಟಿ. ವ್ಯಾಂಕುಬಾಲ ಸಂಜಯ್ ಚಿಟ್ಟಿಸ್ ಇದ್ದಾರೆ

ಪ್ರಸಕ್ತ ಸಾಲಿನ ಹತ್ತು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ 'ಹುವಾವೇ ವಿದ್ಯಾರ್ಥಿವೇತನ'

ಪ್ರಜಾವಾಣಿ ವಾರ್ತೆ

ಬೆಂಗಳೂರು: ಹುವಾವೇ ಸಂಸ್ಥೆಯು 2016-17ನೇ ಸಾಲಿನ 'ಉತ್ಪ್ರೇಕ್ಷೆಯ ವಿದ್ಯಾರ್ಥಿ ವೇತನ'ವನ್ನು ಸಿ.ಎಂ.ಆರ್. ತಾಂತ್ರಿಕ ವಿದ್ಯಾ ಸಂಸ್ಥೆಯ ಪತ್ತು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ನೀಡಿದೆ.

ಎಸ್.ಪ್ರದೀಪ್, ಎಸ್.ಸುಷ್ಮಾ ಪವನಿ ಕುಂಗನ, ಆರ್.ನೀಪಕ್, ಸಿ.ವಂದನಾ, ಎಂ.ಮನೋಜ್ಞ, ಕೆ.ಮಗೇಶ್ವರಿ, ಎಸ್.ಭಾಯಿ, ಬಿ.ಸುಮನ್, ಅಕ್ಷಿನಿ ಭಾಷ ವಿದ್ಯಾರ್ಥಿವೇತನಕ್ಕೆ ಆಯ್ಕೆಯಾದವರು.

ಒಟ್ಟು 172 ವಿದ್ಯಾರ್ಥಿಗಳು ವಿದ್ಯಾರ್ಥಿವೇತನಕ್ಕಾಗಿ ಅರ್ಜಿ ಸಲ್ಲಿಸಿದ್ದರು. ಈ ವೈಕಿ ಹತ್ತು ವಿದ್ಯಾರ್ಥಿಗಳು ಆಯ್ಕೆಯಾಗಿದ್ದಾರೆ.

ಹುವಾವೇ ಸಂಸ್ಥೆಯ ಹಿರಿಯ ಉಪಾಧ್ಯಕ್ಷ ವೀರೇಂದ್ರ ಗುಪ್ತ ಮಾತನಾಡಿ, 'ಹುವಾವೇ ಜಾಗತಿಕ ಮಾಹಿತಿ ಮತ್ತು ಸಂವಹನ ತಂತ್ರಜ್ಞಾನದ ಸಂಸ್ಥೆಯಾಗಿದೆ. ಶೈಕ್ಷಣಿಕ ಉತ್ಪ್ರೇಕ್ಷೆಯನ್ನು ಪ್ರೋತ್ಸಾಹಿಸುವ ಉದ್ದೇಶದಿಂದ ಸಿ.ಎಂ.ಆರ್. ತಾಂತ್ರಿಕ ಸಂಸ್ಥೆಯ ಜತೆ ಒಪ್ಪಂದ ಮಾಡಿಕೊಳ್ಳಲಾಗಿದೆ. ಬಡ, ಪ್ರತಿಭಾವಂತ ವಿದ್ಯಾರ್ಥಿಗಳನ್ನು ಗುರುತಿಸಿ ವಿದ್ಯಾರ್ಥಿವೇತನ ನೀಡಲಾಗುತ್ತಿದೆ' ಎಂದರು.

4 state students picked for Stanford programme

BENGALURU, DHNS: Four students from the state have been selected for Stanford University's 'University Innovation Fellows Program', an initiative that aims to empower students from across the globe to become "agents of change".

Priyanka Srivastava, a second-year computer science engineering student of CMRIT is one of the four selected students. In order to be selected, the students had to go through various rounds of scrutiny. The students were first asked about problems in the country that moved them. They were then asked about some of the work they had already done in their college. "I made a video on farmers' suicide in India, something I feel strongly about. Then I made another video critiquing the education system in out country that relies too much on books and less on practical knowledge," she said. Two other students from her institute and another under Visvesvaraya Technological University (VTU), Shriya Humkeri were also selected. A total of 20 from the country were selected.

The selected candidates will undergo a six-week online-based training. After the six-week training, they will get a chance to stay at the Google campus in USA and undergo four days of final training. The programme also comes with a $4,000 scholarship from Google.

ಚಾರಿತ್ರ ಮಾಹಿತಿ ಮತ್ತು ಸಂವಹನ ತಂತ್ರಜ್ಞಾನದ ಕ್ಷೇತ್ರದಲ್ಲಿ ಸಂಸ್ಥೆ ಹುವಾವೇ ಮತ್ತು ಸಿ.ಎಂ.ಆರ್. ಎಂಜಿನಿಯರಿಂಗ್ ಕಾಲೇಜಿನ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಶಿಷ್ಯವೇತನ ಘೋಷಿಸಿದ ಸಂದರ್ಭದಲ್ಲಿ ಹುವಾವೇ ಸಂಸ್ಥೆಯ ವೀರೇಂದ್ರ ಗುಪ್ತ ಹಾಗೂ ಆರ್.ಸಿ.ಎಂ.ಆರ್. ತಾಂತ್ರಿಕ ಸಂಸ್ಥೆಯ ವ್ಯಾಂಕುಬಾಲ ಸಂಜಯ್ ಚಿಟ್ಟಿಸ್ ಈ ಸಂದರ್ಭದಲ್ಲಿ ಹಾಜರಿದ್ದರು.

ಸಿಎಂಆರ್‌ಐಟಿ-ಹಿಟಾಚಿ ಒಪ್ಪಂದ

■ **ವಿಜಯವಾಣಿ ಸುದ್ದಿಜಾಲ** ಬೆಂಗಳೂರು

ಸಿಎಂಆರ್ ತಾಂತ್ರಿಕ ವಿದ್ಯಾಸಂಸ್ಥೆಯಲ್ಲಿ (ಸಿಎಂಆರ್‌ಐಟಿ) ಕಂಪ್ಯೂಟರ್ ಸೈನ್ಸ್ ವಿಭಾಗದಲ್ಲಿ ವ್ಯಾಸಂಗ ಮಾಡುತ್ತಿರುವ ಅಂತಿಮ ವರ್ಷದ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಡೈನಾಮಿಕ್ಸ್ ಎಎಕ್ಸ್ ಮತ್ತು ಸೀಆರ್‌ಎಂನ ಕೋರ್ ಮಾಡ್ಯೂಲ್ಸ್ ವಿಷಯದ ಬಗ್ಗೆ ಹಿಟಾಚಿ ಸೊಲ್ಯೂಷನ್ಸ್ ಇಂಡಿಯಾ ಟೆಕ್ನಾಲಜೀಸ್‌ನ ಬಿಜಿನೆಸ್ ಸಲೂಷನ್ಸ್ ತಂಡವು ಇನ್- ಕ್ಯಾಂಪಸ್ ತರಬೇತಿಯನ್ನು ನೀಡಲಿದೆ.

ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಕ್ಯಾಂಪಸ್ ತರಬೇತಿ

ಈಚೆಗೆ ಈ ಕುರಿತ ಒಪ್ಪಂದವಾದ ಬಳಿಕ ಮಾತನಾಡಿದ ಹಿಟಾಚಿ ಸೊಲ್ಯೂಷನ್ಸ್ ಇಂಡಿಯಾ ಸಂಸ್ಥೆಯ ಸಿಇಒ ಅನಂತ್ ಸುಬ್ರಮಣ್ಯಂ, ಸಿಎಂಆರ್‌ಐಟಿ ವಿದ್ಯಾಸಂಸ್ಥೆಯೊಂದಿಗಿನ ಈ ಸಹಯೋಗದಿಂದ ಭವಿಷ್ಯದ ಬೆಳವಣಿಗೆಯ ಅಗತ್ಯಗಳನ್ನು ಸಾಧಿಸಬಹುದು ಎಂದು ಹೇಳಿದರು.

ಸಿಎಂಆರ್‌ಐಟಿ ಪ್ರಾಂಕುಬಾಲ ಡಾ. ಸಂಜಯ್ ಚಿಟ್ಟಿಸ್, ಹಿಟಾಚಿ ಸೊಲ್ಯೂಷನ್ಸ್ ಇಂಡಿಯಾ ಸಂಸ್ಥೆಯ ಉಪಾಧ್ಯಕ್ಷರಾದ ಭುವನೇಶ್ವರಿ ಮತ್ತಿತರರಿದ್ದರು.

ಸಿಎಂಆರ್‌ಐಟಿ-ಹಿಟಾಚಿ ಒಪ್ಪಂದ ವೇಳೆ ಸಿಎಂಆರ್‌ಐಟಿ ಪ್ರಾಂಕುಬಾಲ ಡಾ. ಸಂಜಯ್ ಚಿಟ್ಟಿಸ್, ಹಿಟಾಚಿ ಸೊಲ್ಯೂಷನ್ಸ್ ಇಂಡಿಯಾ ಸಂಸ್ಥೆಯ ಉಪಾಧ್ಯಕ್ಷರಾದ ಭುವನೇಶ್ವರಿ ಹಾಜರಿದ್ದರು.

> ನಮ್ಮ ಯುಜಿ ಮತ್ತು ಪಿಜಿ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಈ ಸಹಯೋಗದಿಂದ ಅನುಕೂಲವಾಗಲಿದೆ. ಉದ್ಯೋಗದ ಸಂದರ್ಭದ ವೇಳೆ ಅಗತ್ಯ ಮಾರ್ಗದರ್ಶನ ಸಿಗಲಿದೆ.
> ಡಾ ಸಂಜಯ್ ಚಿಟ್ಟಿಸ್ ಸಿಎಂಆರ್‌ಐಟಿ ಪ್ರಾಂಕುಬಾಲ

Paperless Exams Turn a Plus for Students

THE RIGHT CLICK

Proposal helps students align with industry practices

Bharath.Joshi@timesgroup.com

Bengaluru: Some of the city's top engineering and technology institutes have switched over to computer-based exams to align themselves and students with industry practices.

The latest to join this trend is PES University, where internal assessment examinations for first and third semester students were, for the first time, administered over computers through their intranet.

With these computer-based tests, PES hopes to use data on students' performance in the internal exams and compare them with how they perform in the end-semester examinations. "We want more Tier-1 and Tier-2 companies to recruit from our campus and they are looking for students with application-based knowledge. That can happen only with objective-type tests," PES University Pro Chancellor D Jawahar said.

These computer-based tests are designed to prod students to focus on application-based learning. "If 75% of a class gets a one-mark question wrong, then the weightage of that question will go up. As they progress through semesters, we can analyse data and know who the top performers are," he said.

CMR Institute of Technology (CMRIT) adopted computer-based testing last year. "Many IT services firms use computer-based tests to filter out students during recruitment. We have a portal that is accessible for third and fourth year students to practice quantitative and verbal exercises. This can help students align their efforts," CMRIT principal Sanjay Chitnis said.

APPLICATION IN FOCUS

The tests are designed to prod students to focus on application-based learning

That engineering graduates lack skills is an oft-repeated concern. A recent study by job skills platform Aspiring Minds found 80% of Indian engineering graduates in 2015 unemployable.

"Most universities are told by industry that they need have some basics in place, and computer-based testing is a part of this," said Shekhar Sanyal, country head, The Institution of Engineering and Technology, a UK-headquartered professional body.

The RV College of Engineering on Mysuru Road is developing its own software to administer computer-based testing for internal assessment, principal KN Subramanya said. "It can save time and paper. Also, because many international exams such as GRE, TOEFL and GMAT are online, this would help students."

In September 2014, Mount Carmel College replaced answer sheets with digital pads for a two-hour internal exam for final year business management students.

The college is yet to take a call on making this a regular feature.

City College Makes Its Own Makerspace to Spur Innovation

DO IT YOURSELF

The 1,500-sqft facility will be something between a lab and a builder's garage, where students can experiment with ideas and build prototypes

Nirupama.V@timesgroup.com

Bengaluru: Imagine a college laboratory but spice it up a bit — add a toolbox with a large assortment of saws, spanners and hammers; stock up a range of paints and brushes; throw in a couple of 3D printers and CNC cutters. Lo and behold, you have a campus makerspace!

CMR Institute of Technology here recently set up a fully functional makerspace on its premises — the first of its kind in the city. Put together by Workbench Projects, the 1,500-sqft facility will be something between a laboratory and a builder's garage, where students can experiment with ideas and build prototypes for their projects.

"It will be an essential part of the students' project work," says KB Jaideep, CEO of CMR Group of Institutions. An architect himself, Jaideep spearheaded the project so that students of the college imbibe design thinking and practical knowledge as they learn.

"All engineering institutions have labs. But they are not talking to one another," points out Anupama Prakash, co-founder at Workbench Projects. A makerspace enables collaboration among students, may be even the faculty.

Students are warming up to the idea of using the makerspace like the library or the gym

A makerspace committee has been put in place and frequent workshops and curated meetups are being held. The task is to "make it a culture," as Jaideep puts it.

A student tries his hand at the exhaustive makerspace

Students are warming up to the idea of using the makerspace like any other facility — the library or the college gym. Breaking the common stereotype that building and tinkering is for men, scores of women have been frequenting the facility.

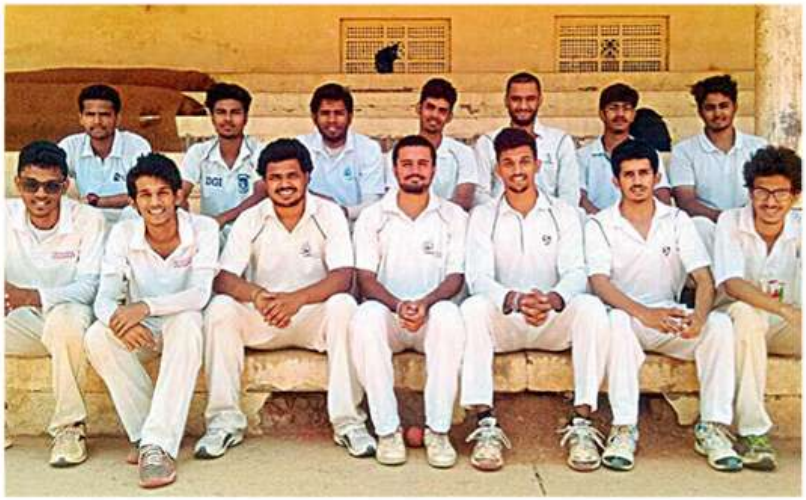
Mrudula Reddy, a first-year architecture student, is excited about the prospects. "This way, I can learn about sensors and technology and students of engineering can learn about design and models," she said.

Every student attends a training on how to use all the equipment in the makerspace. The facility also has a variety of inventory that can be availed by students for various purposes.

"The wow factor is only of the main motivations for students to try their hand at various things," says Prof Muralidhar Reddy, Director at the School of Architecture here, who heads the makerspace.

Students involved in the organisation of the upcoming college cultural festival built the plaques, backdrops, badges and mementos in the makerspace. CMRIT, which recently acquired deemed university status, will blend interdisciplinary work into its new engineering syllabus, using the makerspace as a catalyst.

"The trend is positive," says Prakash of Workbench Projects, which has been invited by institutions in Tamil Nadu for similar projects.



CMRIT Cricket Team who won the 20-overs UVCE Cricket Tournament held at Bengaluru University Cricket Ground. CMRIT defeated UVCE College in the final. —DC

CMR INSTITUTE OF TECHNOLOGY

SPUNKY STUDENTS PUT UP A BREEZY SHOW OF TALENT

Mohammed Waseem
@timesgroup.com

The auditions of the Oppo Bangalore Times Fresh Face 2016 at the breezy outdoor auditorium at CMR Institute of Technology brought out the best of fresh talent from the college. With maximum participation coming from first-year students, it was a great opportunity for them to showcase what they were made of.

OFF TO A GREAT START: The auditions were off to a great start, with explosive dance performances coming from the likes of first-years Puvan Singh and Advika Patel. The dances that followed were interspersed with guitar performances from Prashanth M and Asfar Sharif, singing by Meghana Menon and Shruti Nair, and Kannada rap by Darshan Ramesh. There were also some power-packed dance performances from Stephen, who danced to *Thalli Pogudhey*, Krithi and Aarushi Gupta. For the final Q&A round, fashionista and rallyist Anitha Kholay, who was the celeb judge for the afternoon, selected a total of 10 contestants — five boys and five girls — to whom she posed humorous as well as interesting questions.

WINNERS: Among the girls, pretty lass Lekhana Muthaiah was adjudged the winner for her impressive moves, while spirited dancers Manjula S and Priyanka Purva finished as first and second runners-up, respectively. Among the boys, Tarun Saini won over the judge with his rap and dance skills, while classical singer Abhay Rangan and curly-haired guitarist and singer Bitupan Datta were adjudged as first and second runners-up, respectively.

If you too want to become the freshest face of your college, log on to www.timesfreshface.com today!


Anitha Kholay


WINNER
LEKHANA MUTHAIAH


WINNER
TARUN SAINI


1ST RUNNER-UP
MANJULA S


1ST RUNNER-UP
ABHAY RANGAN


Students take a selfie using the Selfie Expert, the Oppo F1s


A large crowd gathered to watch the auditions


2ND RUNNER-UP
BITUPAN DATTA


2ND RUNNER-UP
PRIYANKA PURVA

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Bangalore Times
fresh face 2016