

# BITS secures device patent for detecting heavy metals in water

## Staff Reporter

Vasco

Researchers from BITS Pilani, K K Birla Goa Campus, have been granted a patent for an innovative 'Electrochemical Microfluidic Device for Detection of Heavy Metal Ions in Water Samples,' designed to detect toxic metal contamination with high sensitivity and precision.

The Patent Office of India awarded the patent on March 31, recognising the invention's potential to enhance environmental safety and improve real-time water testing.

Developed by Prof Jegath Nambi Krishnan and her students—Krishna Gupta (2012-2016) and Arya Agarwaal (2017-2022) from the Department of Chemical Engineering—the compact device offers cost-effective and accurate detection of heavy metals. Measuring just 30 mm × 10 mm × 1 mm, it features a Y-shaped bifurcation separation zone within a single-layer structure.



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### BITS Researchers

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Unlike conventional bulky laboratory equipment, the device uses gold nanostructures created through electroless plating, which amplify electrochemical signals and enhance stability and selectivity in metal detection.