New Sensor To Detect Toxin in Contaminated Water

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A new and highly sensitive material to detect toxic nitroaniline in contaminated water has been synthesized by researchers at Najran University, Kingdom of Saudi Arabia and University of Kuwait in collaboration with a researcher at the JCDAV College, Punjab in their recent study.

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Nitroaniline is a toxic compound found in azo dyes that are commonly used for coloring food and fabrics. It is an extremely hazardous skin and eye irritant and causes poisoning when ingested. The skin and eye contact rapidly causes redness, watering, itching and occasionally blistering. It contaminates ground water after leaching from factories and industries.

Scientists at Najran University, Kingdom of Saudi Arabia and University of Kuwait in collaboration with a researcher at the JCDAV College, Punjab have developed a new and highly sensitive nitroaniline detector by a simple method from zinc oxide and samarium oxide that efficiently adsorbs and senses nitroaniline. Researchers emphasize that a nitroaniline sensor was the need of hour by saying, "…an economic, convenient, efficient, highly sensitive and selective method is required for fast detection of aniline and its derivatives in drinking and environmental waters", and proclaim that they have a solution.

The new composite material can detect as low as 16 micro molar concentration of nitroaniline that could help in testing nitroaniline contamination hence, access if it is fit for consumption especially in industrial areas engaged in food and fabric dyes.

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