

Solar power plan set to bring fresh water to out-of-reach villages

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A solar-powered purification system could provide remote parts of India with clean drinking water for the first time.

Researchers at the University of Edinburgh are developing low-cost, low-energy technology to decontaminate [sewage water](#) in villages.

Chemists and engineers are using state-of-the-art solar energy and [water](#) filtration technologies to develop the simple systems. The initiative will not only provide safer drinking water, but could also help reduce the spread of disease, researchers say.

There is no systematic treatment of sewage in rural India. The Indian Government has focused on purifying [contaminated water](#) in rivers and streams, but the situation could be greatly improved by tackling the problem at source, the team says.

To make contaminated water safe to drink, visible traces of waste are first removed using filters. Next, any remaining organic matter and bacteria is broken down. The team is adapting its existing technologies to power this second stage in the decontamination process.

Their system uses sunlight to generate high-energy particles inside solar-powered materials, which activate oxygen in the water to incinerate harmful pollutants and bacteria.

Dr Aruna Ivaturi, of the University of Edinburgh's School of Chemistry,

who is involved in the project, said: "We are aiming to provide people in rural India with a simple off-grid water decontamination system. This could be achieved by simply fitting our modified solar-activated materials to containers of contaminated water positioned in direct sunlight."

The team hopes to incorporate technologies developed during the five-month pilot project into larger-scale initiatives that deal with water contamination - a major problem in the developing world. Around 77 million people in India do not have access to safe [drinking water](#) - more than any other country in the world.

The project is being carried out in partnership with the Indian Institute of Science Education & Research, Pune.

Professor Neil Robertson, of the University of Edinburgh's School of Chemistry, who is leading the project, said: "Working closely with our Indian partners, we aim to harness the sun's energy to tackle a huge problem that affects many people around the world."

Provided by University of Edinburgh

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