

THE AMSPARE PROJECT

The AMSPARE project's overall aims are to understand the impact of antibiotic pollution on the environmental microbiology; design effective measures for monitoring antibiotic levels; and remove antibiotic residue from waste if they are present.

The AMSPARE project consists of four work packages. The specific objectives of the work packages are listed below.

Work package 1

- Create an AMR map through geochemical and metagenomic analysis
- Determine the influence of anthropogenic factors on microbial communities

Work package 2

- Develop and validate sensors to a variety of antibiotics that can detect antibiotic in effluent at different concentrations

Work package 3

- Develop and validate photocatalytic technologies for antibiotics at different concentrations in CETP effluent

Work package 4

- Consolidate industry and government relationships and create and develop effective strategies to regulate antibiotic waste in the environment

MORE ABOUT THE AMSPARE PROJECT

The AMSPARE project is bringing together experts on sensor technologies, water treatment and remediation from India with experts on environmental microbiology, meta-omics geochemistry and policy and industrial regulatory processes from the UK, to engage the issue of AMR proliferation in the environment.

The laboratory research will provide data that will guide the development of policy proposals to regulate antibiotic waste in the environment. The development process will adopt a collaborative governance approach, and will explore the challenges and complexities that are unique in different settings, and that influence the practicalities of the solutions offered.



THE AMSPARE TEAM

AMSPARE WORKSHOP IN INDIA

Date: 20th of January 2023

Venue: Institute of Technology Bombay (IITB)

Participating institutions:

- University of the West of Scotland (UWS)
- Glasgow Caledonian University (GCU)
- Indian Institute of Technology Bombay (IITB)

The workshop theme was on addressing environmental AMR potentially associated with antibiotic manufacturing activities. The workshop opened with AMR focused presentations from stakeholders who are recognised experts in their fields. The AMSPARE project team also presented their work which covered progress made across the four work packages. Attendees at the workshop were pleased to see working demonstrations of the sensor, developed as part of work package 2, to detect antibiotics in effluent.

The workshop concluded with roundtable discussions that highlighted challenges in wastewater management, with attendees proffering strategies to promote the practicality, acceptability, and implementability of policies for wastewater management. The workshop was well attended by stakeholders across several sectors. It created networking opportunities, provided a platform for knowledge exchange, and highlighted priority issues for consideration in the development of policy proposals for pharmaceutical wastewater management.

While in India, the AMSPARE team visited one of the Common Effluent Treatment Plants (CETPs). The visit facilitated better understanding of the complexities of the wastewater treatment processes, including the use of separate unit processes working synergistically to achieve the anticipated quality of the treated water.



WASTEWATER TREATMENT AT CETP

Research outcomes from the AMSPARE project will transcend beyond India. The AMSPARE project will enhance technological advancements for wastewater treatment; develop guidelines for effluent management; and promote transparency in the antibiotic supply chain to protect our environment.