



Above - Schematic of sewage odour and corrosion generation Image

## Cutting Edge Research for the World's Oldest Problem

SVSR are excited to announce their collaboration with UNSW Sydney to examine a new and promising method for controlling odours in wastewater collection networks.

In a series of world-first experiments led by the graphene team of UNSW's School of Materials Science and Engineering, SVSR will be examining the potential for Graphene Oxide, the "superdesiccant" material, to be applied to sewer systems throughout Australia.

"Our goal is to develop Australian-made materials and designs which can be retro-fitted to existing wastewater infrastructure throughout Australia", said Duncan Reynolds, Research and Development Manager for SVSR. "The bonus is that if we reduce nuisance odours, we will also reduce corrosion throughout the network, which reduces costs for utilities trying to manage aging concrete sewer networks. It's a win for the community, the Utility and the environment."

The material was developed by a team led by Dr Rakesh Joshi of the UNSW School of Materials Science and Engineering, who has published many articles and papers on this subject.

"This is a stable new material that shows significant gains in adsorption capacity over conventional desiccants," says Dr Joshi.

The researchers say the ability to fine-tune the spaces between the layers of graphene oxide as desired will allow the development of customised desiccants to control moisture across multiple applications.

The new desiccant can also discharge moisture at energy-saving low temperatures, enabling it to be easily used over and over again. By contrast, the heating required to regenerate conventional desiccants is often considered prohibitively expensive.

"This combination of high adsorption capacity and a rapid rate of absorption can significantly increase the efficiency of any desiccant system.





29 Shepherd Street  
LIVERPOOL NSW 2170  
P: 02 8798 8788  
E: [admin@svsr.com.au](mailto:admin@svsr.com.au)  
W: [www.svsr.com.au](http://www.svsr.com.au)

“Likewise, the relatively low temperatures at which discharge can be achieved offers significant advantages by greatly reducing the energy intensity required for regeneration.”

According to Duncan Reynolds, this factor presents a significant advantage over alternative dessicants and filter media currently in use. He says that odour control media is currently not re-used, since it is prohibitively expensive to do so. “Most filter media is imported and landfilled when it is consumed. We are very excited to look at a more sustainable alternative and we believe graphene oxide has enormous potential.”

This Project, which is part of AusIndustry’s Innovation Connections Program, will run until July 2019. It is also the flagship Project for SVSR’s Internship Program and is part of SVSR’s ongoing commitment to partner with UNSW and their student body to develop innovative solutions to real-world problems.