

## English:

- Almost half of India's population relies on agriculture. To boost agronomic productivity, farmers use pesticides like DDT, malathion and parathion.
- Malathion and parathion belong to a class of pesticides known as organophosphates. However, they leach into water bodies through agricultural runoff. Ultimately they reach the bodies of various life forms including humans, where they act as potent neurotoxins, and also cause drowsiness, lethargy, anxiety, depression, fatigue, and irritability.
- Hence, organophosphates have been restricted in many countries, but continue to be used in India.
- Effective solutions to this problem of contamination of water-bodies by organophosphates have not been developed yet. But with synthetic biology on our side we have come up with a solution.
- We are Team iGEM IISc Bangalore. We are designing an eco-friendly filter using bacterial cellulose sheets, functionalized with enzymes degrading organophosphates efficiently into relatively harmless products.
- Project CelloPHane also offers a novel plug-and-play platform which can be used to design analogous bioremediation strategies for other contaminants with minimal modifications.
- We also seek to reach out to stakeholders in the agricultural sector, industry and academia, and be enriched by their perspectives.
- We are also focusing on disseminating information about synbio to general public through pamphlets, primers and symposia.
- Using synbio, we are triggering the next gene revolution in accessible bioremediation strategies and contributing in our own way to fulfil the United Nation's Sustainable Development Goals.