INNOVATION FOR WATER MANAGEMENT

DESIGN THINKING

- *Water harvesting*
- *Water recycling*
- *UV disinfection technique*
- *Acoustic nanotube technique*
- *Smart water management*

WATER HARVESTING

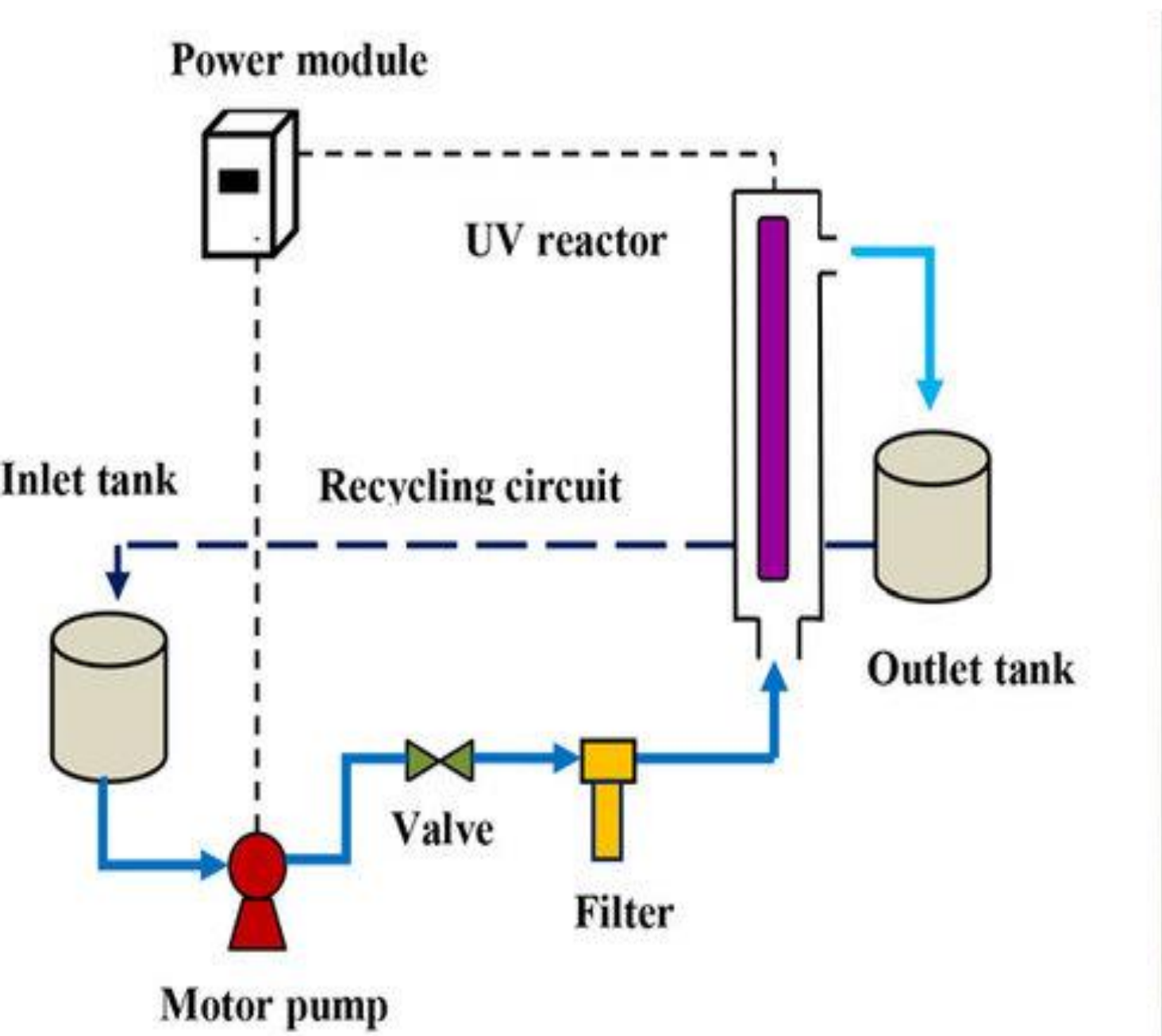
- ✓ *Water harvesting is the practice of collecting and storing rainwater for later use. This technique has been used for thousands of years, and modern technology has made it more efficient and scalable. There are several types of water harvesting systems, including rooftop rainwater collection, land-based catchment systems, and underground storage tanks.*

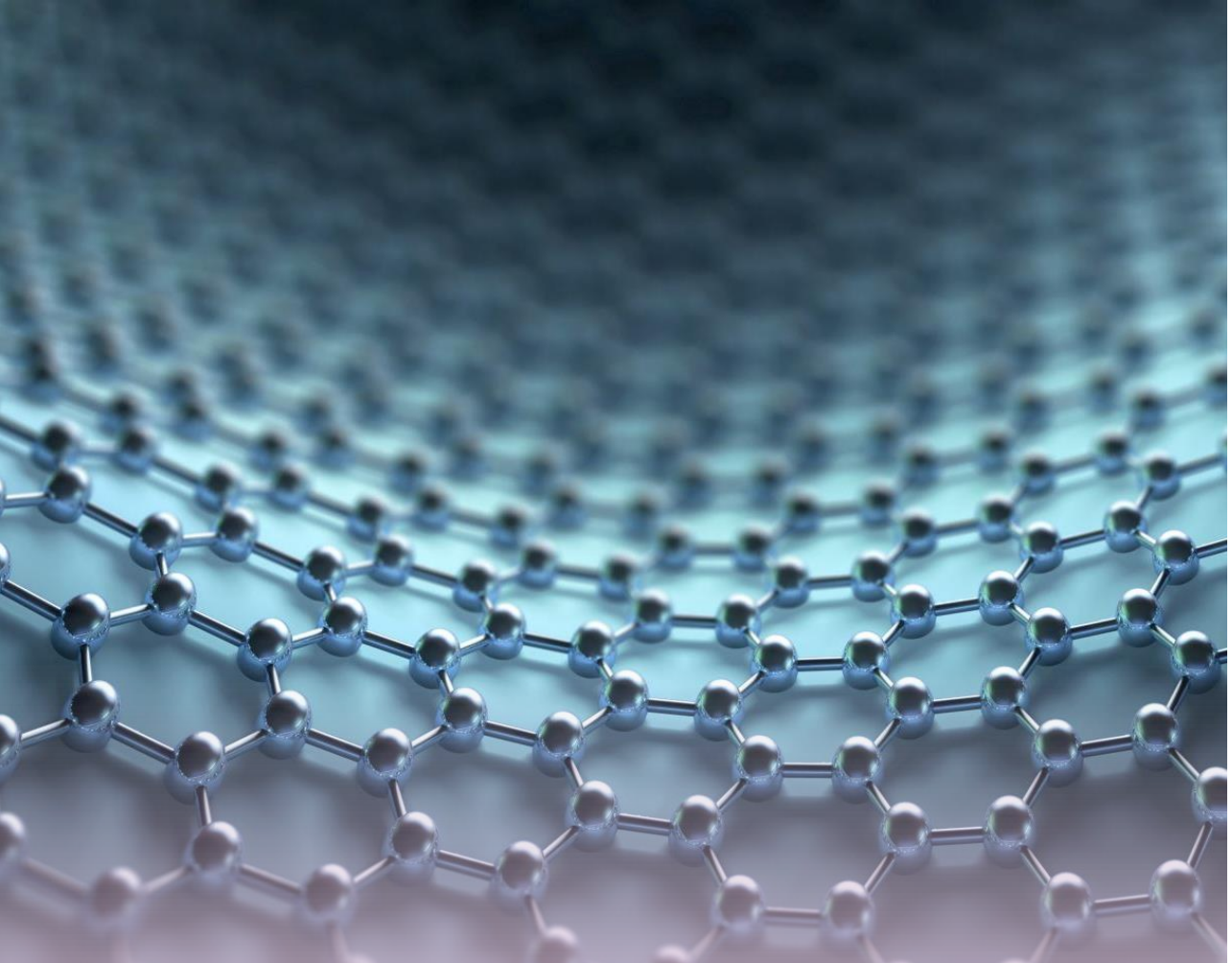
WATER RECYCLING

- ✓ *Water recycling systems work by taking wastewater and treating it until it is suitable for reuse in the intended application. Water recycling systems vary depending on the type of water to be recycled and the requirements of the intended application.*

UV DISINFECTION TECHNIQUE

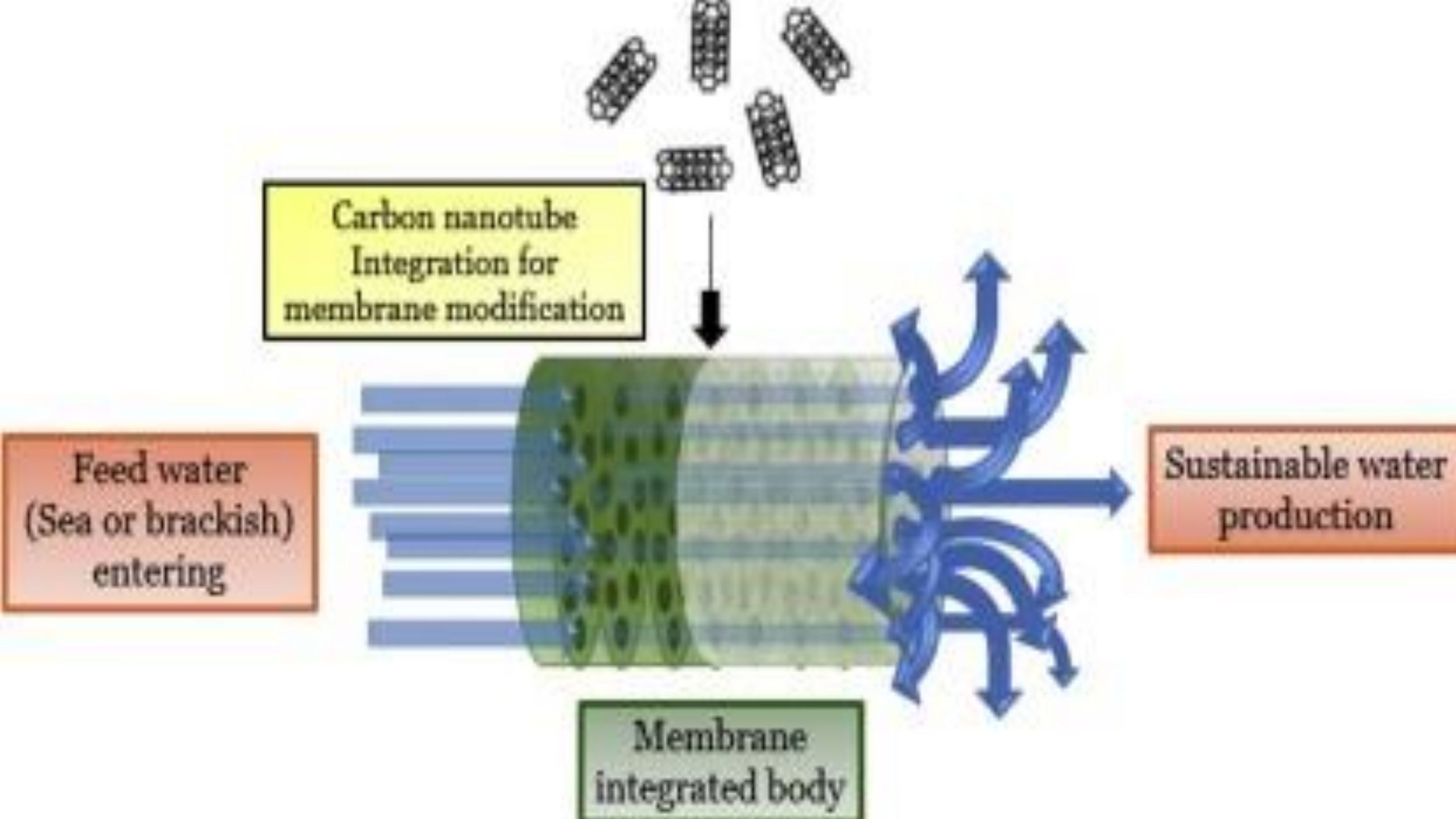
- *UV radiation affects microorganisms by altering the DNA in the cells and impeding reproduction. UV treatment does not remove organisms from the water, it merely inactivates (kills) them. The effectiveness of this process is related to exposure time and lamp intensity as well as general water quality parameters.*


Power module
UV reactor
Inlet tank
Recycling circuit
Outlet tank
Valve
Filter
Motor pump



ACOUSTIC NANOTUBE TECHNIQUE

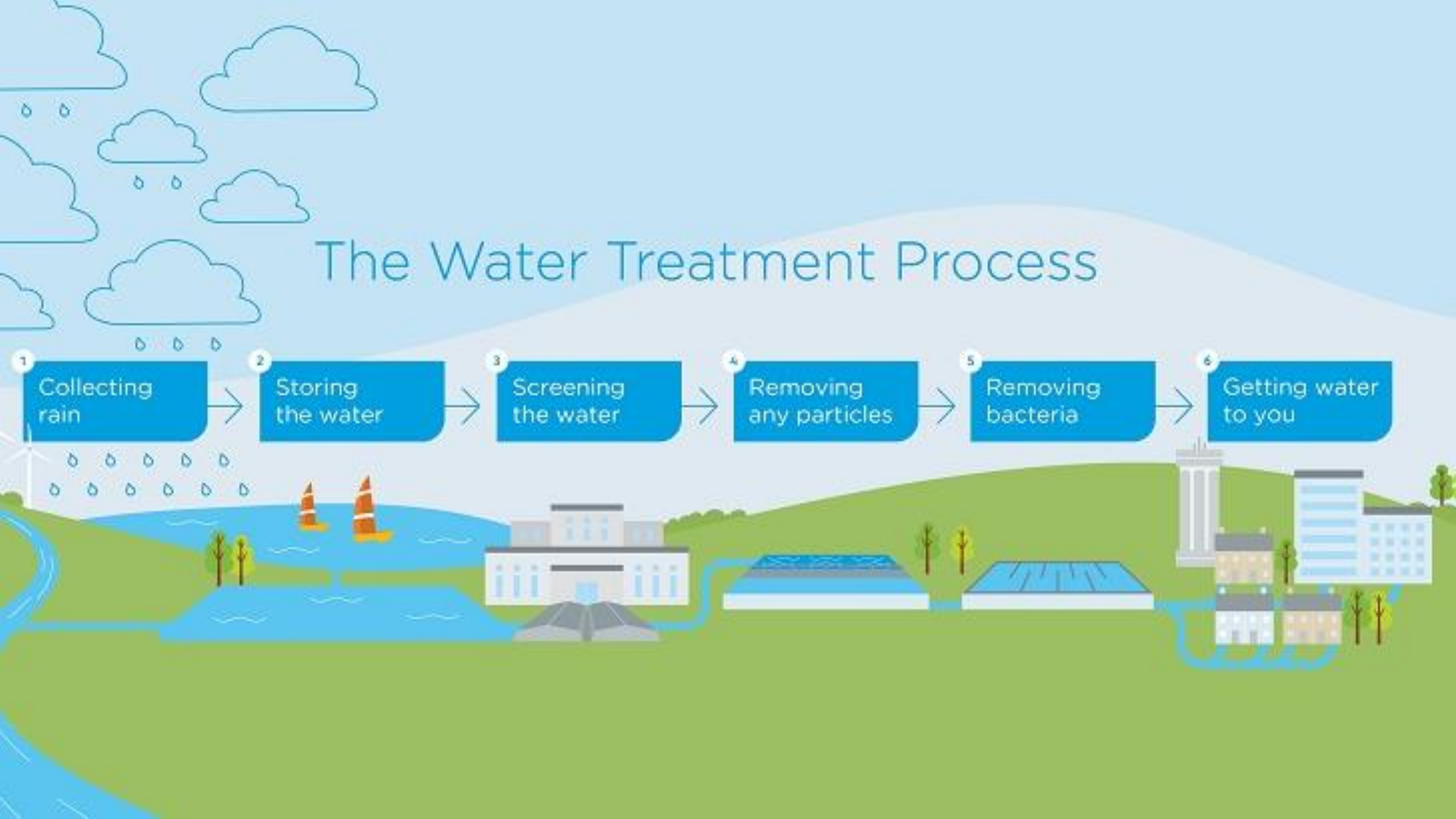
- ✓ *This molecular sieve for water filtration uses carbon nanotubes with tiny diameters and is powered by sound. By pushing water away from impurities rather than removing them from water, this technique flips the conventional understanding of filtration on its head.*


Carbon nanotube Integration for membrane modification
Feed water (Sea or brackish) entering
Sustainable water production
Membrane integrated body

7 BENEFITS OF IOT-POWERED SWM

- *Real-time Analysis of Water Consumption*
- *Reduced Maintenance Costs*
- *Better Communication among stakeholders*
- *Predicting Potential Failures*
- *Remote Monitoring*
- *End-to-End Services*
- *Interactive Reports*

The Water Treatment Process



SMART WASTEWATER MANAGEMENT SYSTEMS

- ✓ *IoT technology is a smart concept to enable reliable communication between wastewater management systems and administrators. It brings a beneficial combination of utility and cost-savings, which improves overall productivity. Moreover, it is an effective way to identify potential areas of water wastage and take actions accordingly to minimize the same.*

CONCLUSION FOR INNOVATION SWM

- ✓ *This application will improve the water sustainability and management, as well as the policy of smart cities adequately adapted considering different constrains. The selected techniques and actions depend on the considered threshold, the capital investment, and the availability of techniques and equipment.*