International Conference on

"Cutting-edge Solutions to Wicked Water Problems"

September 10-11, Tel Aviv University, Israel

The Water Research Center at Tel Aviv University (WRC-TAU)

The Water Research Center at Tel Aviv University (WRC-TAU) established as an effective means of developing and implementing pioneering water and wastewater treatment technologies that will secure high-quality water supply, both for drinking and for agricultural purposes. It is leading researches in two parallel channels:

- To provide the state-of-the-art resources required to accelerate the pace of research and discovery in the fields of water and wastewater, with a view to developing pioneering water treatment technologies to ensure a high-quality global water supply for drinking and agricultural purposes.
- To reinforce the standing of the Center as a world powerhouse in the field
- To bolster the University's capacity to train a new generation of water specialists who will lead and shape the field in the years to come.
- To ensure research is guided by market needs by expanding international cooperative ties with water authorities and leading universities around the world.
- To ensure research has a real-world impact by sharing unique TAU insights with the global water R&D community through annual conferences and workshops.

Our research is focused on assimilating and integrating chemical, biological, mathematical and physical tools to improve water quality through combined experimental and theoretical work. Specific research activities include:

✓ Investigation on the chemical and physical fate of various micro and nano-contaminants, to identify their most stable and toxic degradation products and to trace upon their transport in the environment.
✓ Non-domestic waste water: photolysis and oxidation of hospital and industrial waste water via biological treatment, such as membrane bioreactors (MBR) coupled with AOP systems
✓ Photocatalysis: solar driven photocatalytic activity of nitrogen-doped TiO_2 nanostructured membranes and other photocatalysts such as bismuth oxyhalides
✓ Hybrid AOP–soil aquifer treatment (SAT) technology: micropollutant removal and enhanced biodegradation by ozonation of domestic secondary effluent followed by SAT
✓ Biofouling control in water-distribution systems and reverse-osmosis membranes by UV and AOP pretreatment
✓ Particle-shape analysis of water subjected to granular and membrane filtration and ozonation
✓ Solar disinfection of water: the synergy of solar UV radiation and heat
✓ Nanoparticles: nanocolloidal particles to improve water quality
✓ Biofiltration: development of high-rate biofiltration systems for wastewater effluents
✓ Bioethanol production via pretreatment of agricultural and paper waste
✓ Biosensors development to monitor induction of selected genes, in real time (in this case) by UV exposure or other AOPs
✓ Micro-plastic and phthalates – developing bio-indicators to trace upon these contaminants within the marine and continental environments.
✓ The effect of medical cannabis on dugs consumption amongst elders