

The 6th Graduate Students' Water Research Conference PROGRAM

29/12/2024, Grand Water Research Institute, Technion, Haifa

8:30 – 9:00 **Registration & Welcome Coffee** GWRI Lobby

9:00 – 10:15 **Plenary Session** GWRI Auditorium

Greetings Prof. **Noam Adir**, Technion Executive Vice President for Research | Prof. **Ori Lahav**, Dean of the Faculty of Civil and Environmental Engineering | Prof. **Uri Shavit**, Head of the Department of Environmental, Water and Agricultural Engineering

Keynote Speaker: Dr. **Atar Herziger**, “Avoid, Shift, Improve: Insights from Research on Sustainable Consumer Choices”.
Assistant Professor of Environmental Psychology; The Faculty of Data and Decision Sciences at the Technion.

10:15 – 10:30 **Coffee Break** GWRI Lobby

<p>10:30 – 12:15</p> <p style="text-align: center;">Rabin 406</p> <p style="text-align: center;">Water and Wastewater Treatment (Hebrew)</p> <p style="text-align: center;">Chair: Adi Nigri</p> <p>Erez Ruck Catalytic Decomplexation of Copper-Organic Chelates for the Selective Recovery of Copper from Industrial Wastewater and Contaminated Soils (Hebrew)</p> <p>Omer Yashar Water Decontamination Through Sulfate-Radical Oxidation in a Nano-Enabled Catalytic Filtration Process for Non-Potable and Potable Water Reuse (Hebrew)</p> <p>Samah Abasi The Effect of Free Ammonia, Free Nitrous Acid, Dissolved Oxygen and Salinity on Hypersaline Nitritation Stability (Hebrew)</p> <p>Shira Gavriely Mucin-Based Solutions for Water Decontamination (Hebrew)</p> <p>Tamir Zalmon Modified Clay Composites for the Removal of PFAS from Water (Hebrew)</p>	<p style="text-align: center;">Rabin 407</p> <p style="text-align: center;">Hydrology and Contaminant Treatment (English)</p> <p style="text-align: center;">Chair: Julia Ghantous</p> <p>Hailu Demissie Tulu A Facile Activation of Supported Platinized Catalyst: Implications to Aqueous Nitrate Catalytic Decontamination Technology (English)</p> <p>Shany Ben Moshe On the Transport and Fate of Heavy Metals in Calcareous Soils - a Spectral Induced Polarization Study (English)</p> <p>Rachel Ben Efraim Design an Adsorbent-Based Passive Sampler for Per- and Polyfluoroalkyl Substances (PFAS) Monitoring in Groundwater (English)</p> <p>Debanik Bhattacharjee Dynamic Coupling of Flow and Surfactant Adsorption at Interfaces in a Heterogeneous Pore Network (English)</p> <p>Subhajit Dey Use of Field-Scale Particle Tracking and Simulated Annealing in Contaminant Transport Inverse Modelling (English)</p>	<p style="text-align: center;">GWRI Auditorium</p> <p style="text-align: center;">Innovation in Resource Management for Water and Agriculture (mixed)</p> <p style="text-align: center;">Chair: Neta Frank</p> <p>Aleksandr Ershov Synthesis of Polyamide Membranes with Ion-Specific Selectivity by Incorporating the Target Ion in the Polymerization Reaction (English)</p> <p>Guy Avrahami Release of Iron Nanoparticles from Jellyfish-Based Hydrogel for Fertilization Use (English)</p> <p>Tzah Ben Hamo Development of Water Treatment System for Removing Nitrate by Donnan Dialysis into a Bicarbonate Rich Stream (English)</p> <p>Yaron Franco Simplified Soil Dry Density Measurement (Hebrew)</p> <p>Neriya Perez Lapid Airborne and Sedimentary Drift of Herbicides Using UAVs and Tractors Across Variable Operational and Meteorological Conditions (Hebrew)</p>
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12:15 – 13:30 **Poster Session + Lunch** GWRI Lobby

<p>13:30 – 15:15</p> <p style="text-align: center;">Rabin 406</p> <p style="text-align: center;">Aquatic Systems and Environmental Technologies (mixed)</p> <p style="text-align: center;">Chair: Danit Karsagi</p> <p>Maya Van Gelder The Rotation of Fish Eggs Relative to the Surrounding Water and its Implication to Mass Transfer (English)</p> <p>Almog Ash Micritization in the Persian Gulf - Abu Dhabi: Chemical Precipitation or Physical Boring Activity? (English)</p> <p>Rajhans Negi Life Cycle Assessment of a Novel Photocatalysis Process for Micropollutants Treatment: Impact Reduction Potential in the Transition from Lab to Pilot Scale Setup (English)</p> <p>Tal Godinger Dynamics of Water Quality in a Lowland Urban Stream in a Mediterranean Climate (English)</p> <p>Semion Polinov UAV-USV System for Marine Monitoring Tasks (Hebrew)</p>	<p style="text-align: center;">Rabin 407</p> <p style="text-align: center;">Data-Driven Approaches in Water Systems (mixed)</p> <p style="text-align: center;">Chair: Gal Perelman</p> <p>Ofek Aloni Graph Neural Networks and Random Forests for Report-Based Failure Prediction in Sewage Pipes (Hebrew)</p> <p>Merav Tal-maon Identifying the Optimal Type and Locations of Natural Water Retention Measures Using Spatial Modeling and Cost-Benefit Analysis (Hebrew)</p> <p>Stav Cohen WaCSim: A Water and Cyber Simulation Tool for Enhancing Cyber Security in Smart Water Systems (Hebrew)</p> <p>Amir Hadad Secchi Disk Meets Underwater Computer Vision: Advancing Theory and Method (English)</p> <p>Sabrin Hilau Isakov CEcBaN: A Tool for CCM-ECCM Bayesian Network Causal Analysis of Ecological Time-Series (English)</p>	<p style="text-align: center;">GWRI Auditorium</p> <p style="text-align: center;">Water and Wastewater Treatment (English)</p> <p style="text-align: center;">Chair: Ofir Shorshy</p> <p>Chen Dagan-Jaldety New Approach for Rb⁺ Separation from Brines Using Prussian-blue Analogue (PBA) Ion-Chromatography (English)</p> <p>Mor Shental-Isaacs The Effect of Biomass Properties on Membrane Biofouling in a Mesophilic Anaerobic Membrane Bioreactor Treating Low-Strength Domestic Wastewater (English)</p> <p>Ruohe Cai Molecular Layer Deposition (MLD) as a Versatile Platform for Water Treatment: Precise Engineering of Dense Membrane (English)</p> <p>Lin Gao Minimizing Nitrous Oxide Emissions in Single-Stage Partial Nitrification and Anammox Reactors Under Hypersaline Conditions (English)</p> <p>Olanrewaju Beyioku Impact of Adsorbent Surface Properties on the Adsorption and Desorption Kinetics of PFAS: Insights from QCM Measurements and their Implementations (English)</p>
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15:15 – 15:45 **Closing Session, Awards & Hanukkah Candle Lighting (+Doughnuts!)** GWRI Lobby

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Posters Session

- 1 **Siyu Pan** Achieving Charge Reversal of Polyamide Nanofiltration Membranes Using Multivalent Cations
- 2 **Noam Karo** Advancing Marine Carbon Dioxide Removal through Electrochemical Alkalinity Enhancement and Mineralization
- 3 **Natasha Katsevman** Air-SAT: Active Air Injection for Enhancement of Efficiency in Soil Aquifer Treatment - Field Scale Exploration
- 4 **Offir Inbar** Analysing the Secondary Wastewater-Treatment Process Using Faster R-CNN and YOLOv5 Object Detection Algorithms
- 5 **Roman Belykh** Carbon Quantum Dots as Components of a UV Detection System for Water Treatment Applications
- 6 **Raz Nussbaum** Climate Change Impact on Urban Runoff in the Eastern Mediterranean
- 7 **Jonathan Blaustein** Emission Mechanism and Atmospheric Distribution of Airborne Marine Viruses
- 8 **Kbrom Mearg Haile** Extracellular Polymeric Substances Attribute to Biofouling of Anaerobic Membrane Bioreactor: Adhesion and Viscoelastic Properties
- 9 **Tian Qiu** Extraction of Cellulose Nanocrystals from Cotton-Based Textile Waste and its Application in Water Treatment
- 10 **Raghad Shamaly** From Traditional Simulation to Machine Learning: Comparing EPANET-MSX and Physics-Informed Neural Networks in Water Quality Modelling
- 11 **Maria Khoury** Growing Black Soldier Fly Larvae on Sewage Sludge and Other Organic Wastes to Produce Valuable Products
- 12 **Hala JMILI** How Much the Diffuse Recharge is Really Important in the Chalk Aquifer Under Desert Conditions?
- 13 **Bangxing Jian** Investigate Trade-off Between Permeability and Ion-Ion Selectivity in Polyamide Membranes
- 14 **Yarden Maor** Nitric Acid-Treated Carbon Felt as a Cathode for Generation of Hydroxyl Radicals via Electro-Fenton for Water Treatment
- 15 **Tal Maoz** Norovirus Dynamics in Israel through the Lens of Wastewater-Based Epidemiology
- 16 **Prince Kumar** Numerical Analysis of CO₂ Migration and Trapping in the Heterogeneous Jurassic Saline Aquifer, the Negev Desert, Israel
- 17 **Barak Halpern** Ozonation as an Effective Pre-treatment for Enhancing the Biodegradation of Membranes
- 18 **Adala Ghadir** Polyphenolic Fractions from Olive Mill Wastewater and Willow Plants with High Sun Protection Factor to Protect Skin Cells From UV
- 19 **Noa Bachinsky** Studying the Effect of Salt Ions Introduced during Synthesis of Nanofiltration Membranes on the Charge and Pore Structure of the Membranes
- 20 **Noa Ram** Synthesis-Morphology-Performance of Polyamide Membranes with Controlled Reaction Conditions
- 21 **Elina Yachnin** The Effect of Alternating Electric Fields on Membrane Colloidal Fouling
- 22 **Mai Am-Shalom** The Effect of the Organic Plasticizer TXIB on the Coral Stylophora Pistillata
- 23 **Ofir Shorshy** Validation and Improvement of Microplastic Image-Based Quantification Method Based on Nile Red Staining
- 24 **Tongzhou Gan** Visualizing pH Spreading in Miscible Displacement through Porous Media
- 25 **Aviya Ziner** VOCs Profile in Marine Surface Microlayer and Its Spatiotemporal Variations