



# CONFERENCE PROGRAM

## Monday, February 27<sup>th</sup>

<b>8:15-9:00</b>	<b>Registration</b> (Rabin Building)
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### Opening session (Rabin Building Hall)

<b>9:00-9:15</b>	Greetings: Alex Furman, symposium chair Shlomo Bekhor, Dean, Civil & Environmental Engineering Greidinger family representative
<b>9:15-9:45</b>	Nitrogen and phosphorus fertilization in crop production to help shaping sustainable futures <i>Oene Oenema (Invited Speaker)</i>
<b>9:45-10:15</b>	The occurrence of heavy metals and radionuclides in global phosphate rocks and fertilizers: Implications for environmental impacts <i>Avner Vengosh (Invited Speaker)</i>
<b>10:15-10:30</b>	<b>Coffee break</b>

	<b>Session 1a: Frontiers in plant nutrition to promote sustainable intensification of crop production</b> Conveners: Shahar Baram, Hillel Magen, Uri Yermiyahu (Rabin Building Hall)	<b>Session 1b: Soil Health: Towards closing gaps in both management and assessment</b> Conveners: Gil Eshel and Tal Svoray (Water Research Institute Hall)
<b>10:30-10:45</b>	Sulphur and magnesium: Key elements in stress mitigation <i>Ismail Cakmak (Invited Speaker)</i>	Soil quality assessment with imaging spectroscopy <i>Tarin Paz-Kagan</i>
<b>10:45-11:00</b>		Optical properties of water-extractable organic matter as possible indicators for soil organic matter response to irrigation water quality and management <i>Mikhail Borisover</i>
<b>11:00-11:15</b>	Fertilizing future farming <i>Achim Doberman</i>	Quantifying spatial soil health trends at the catchment scale <i>Tal Svoray</i>



<b>11:15-11:30</b>	Can oxygen promote agricultural production? <i>Shahar Baram</i>	Using remote sensing to measure rills formation in a field with and without cover crops <i>Simon Futerman</i>
<b>11:30-11:45</b>	Reforming crops' mineral diagnostics by chemometrics <i>Uri Yermiyahu</i>	Soil health index: selection of indicators for mediterranean agricultural systems <i>Oshri Rinot</i>
<b>11:45-12:00</b>	Mineral mass balances reveal the phenology of evergreen and deciduous tree crops' nutrient uptake <i>Or Sperling</i>	Ecosystem services of soil predatory mites depend on a functional soil food web <i>Eric Palevsky</i>
<b>12:00-12:15</b>	Relationship between fertilizer N load and nitrous oxide emissions – can we generalize? <i>Ilia Gelfand</i>	Slow release of copper from jellyfish-based hydrogels for soil enrichment <i>Ines Zucker</i>
<b>12:15-13:00</b>	<b>Lunch break</b> (Water Research Institute Building)	

	<b>Session 2a: Frontiers in plant nutrition to promote sustainable intensification of crop production</b> Conveners: Shahar Baram, Hillel Magen, Uri Yermiyahu (Rabin Building Hall)	<b>Session 2b: Advanced treatment of organic waste for sustainable use in crop production</b> Conveners: Liora Shaltiel-Harpaz and Avi Shaviv (Water Research Institute Hall)
<b>13:00-13:30</b>	Fully biodegradable coating technology brings controlled release fertilizers into a new era <i>Leon Terlingen (Invited Speaker)</i>	The black soldier fly, a multi-directional contribution to agriculture, from pest reduction to fertilization through waste depositing and feed proteins production <i>Liora Shaltiel</i>
<b>13:30-13:45</b>	Desert dust, volcanic ash and forest fire ash as plant fertilizers in an ambient and elevated CO2 levels <i>Anton Lokshin</i>	Can P availability of rock phosphate be increased through co-composting with agricultural plant residues? <i>Yael Laor</i>
<b>13:45-14:00</b>	Concomitant tracking of NH3, N2O and soil mineral-N for evaluation of fertilization practices sustainability; benchtop to greenhouse scale experiments. <i>Yael Dubowski</i>	Recycled phosphate fertilizers from organic waste streams for more sustainable food production <i>Patricia Imas</i>



<b>14:00-14:15</b>	Diurnal nutrients uptake as affected by environmental conditions <i>Petar Jovanovic</i>	Subcritical water extraction – a circular economy approach for food waste valorization and for sustainable use in agriculture <i>Roy Posmanik</i>
<b>14:15-14:30</b>	Effect of macronutrients fertilization on virgin olive oil quality <i>Arnon Dag</i>	Volatile organic compounds (VOCs) as indicators for biodegradability of plastics for agricultural field mulching <i>Yigal Achmon</i>
<b>14:30-14:45</b>	Amorphous iron montmorillonite composite for phosphate adsorption and reuse. <i>Neriya Peretz Lapid</i>	Hydrothermal decomposition of plastic – a new technology to fight the long-term effects of agricultural plastic usage <i>Ran Darzi</i>
<b>14:45-15:00</b>	Alternative phosphorus sources for efficient plant fertilization management <i>Ran Erel</i>	
<b>15:00-15:15</b>	<b>Open discussion:</b> Frontiers in plant nutrition and sustainable crop production	
<b>15:15-17:00</b>	<b>Poster session</b> (Water Research Institute Building) Alcoholic and non-alcoholic beverages, snacks and finger food	

## Tuesday, February 28<sup>th</sup>

<b>8:30-9:00</b>	<b>Registration</b> (Rabin Building)	
	<p><b>Session 3a: Precision agriculture and robotics for improved resource efficiency</b>          Conveners: Amir Degani and Tarin Paz-Kagan          (Rabin Building Hall)</p>	<p><b>Session 3b: Addressing the agricultural water cycle</b>          Conveners: Adi Radian and Itamar Nadav          (Water Research Institute Hall)</p>
<b>9:00-9:30</b>	AI applications for crop health <i>Spyros Fountas (Invited Speaker)</i>	Towards a more sustainable reclaimed water reuse practice: Facts and Figures <i>Despo Fatta-Kassinou (Invited Speaker)</i>
<b>9:30-9:45</b>	Demonstrating precision agriculture with VEN $\mu$ S <i>Arnon Karnieli</i>	Restoring riparian ecosystems to provide multiple sustainable agricultural benefits <i>Orah Moshe</i>



<b>9:45-10:00</b>	Almond's flowering phenology assessment by multi-spectral satellite imagery <i>Oren Lauteman</i>	Soil moisture data assimilation to estimate irrigation water use <i>Ben Livneh</i>
<b>10:00-10:15</b>	Estimation of tomato leaves orientation for robotic early diseases detection using deep neural network model <i>Adi Cohen</i>	A comparative study on uptake of chromium and Zinc in pulses from electroplating effluent using electrokinetic remediation <i>Jegathambal Palanichamy</i>
<b>10:15-10:30</b>	How sensitive is thermal image-based orchard water status estimation to canopy extraction quality? <i>Livia Katz Simhai</i>	Identifying "under the radar" pathogen indicators and antibiotic resistance genes in treated wastewater irrigated produce and soil <i>Eddie Cytryn</i>
<b>10:30-10:45</b>	Leveraging data standardization to allow data sharing, better collaboration and agronomic big data analysis <i>Sagi Katz</i>	Diluting effluents for irrigation as an alternative for disposal of dairy wastes <i>Itamar Nadav</i>
<b>10:45-11:00</b>	<b>Coffee break</b>	

	<b>Session 4a: Precision agriculture and robotics for improved resource efficiency (cont.)</b> Conveners: Amir Degani and Tarin Paz-Kagan (Rabin Building Hall)	<b>Session 4b: Addressing the agricultural water cycle (cont.)</b> Conveners: Adi Radian and Itamar Nadav (Water Research Institute Hall)
<b>11:00-11:15</b>	Development of autonomous robotic weeding system <i>Asi Lazar</i>	UV-LEDs for biofouling mitigation during drip irrigation with reclaimed wastewater <i>Eran Friedler</i>
<b>11:15-11:30</b>	The use of open-source, affordable hardware in precision agriculture <i>Elad Levintal</i>	Towards robust mainstream anammox: the tale of NOB control <i>Xiaowu Huang</i>
<b>11:30-11:45</b>	A methodology to characterize an optimal robotic manipulator for selective spraying of nano materials in vineyards <i>Roni Azriel</i>	Agricultural streams are the "Canary in the cage" of the agriculture water cycle <i>Roey Egozi</i>

<b>11:45-12:00</b>	Predict crop yield using Satellite solar-induced chlorophyll fluorescence-based semi-empirical model without calibration <i>Oz Kira</i>	Removal of micropollutants of emerging concern from treated effluent used for agriculture irrigation <i>Yuval Alfiya</i>
<b>12:00-12:15</b>	Assessing the effects of pollution on vegetation cover using remote sensing in a desert environment <i>Julius Bamah</i>	The economic cost of wastewater quality standards <i>Yehuda Slater</i>
<b>12:15-12:30</b>	Predicting of canopy nitrogen content based on UAVs and satellites data fusion in citrus orchards <i>Avioz Dagan</i>	Organic contaminants in fresh produce irrigated with reclaimed wastewater: Human exposure and health concerns <i>Evyatar Ben Mordechay</i>
<b>12:30-12:45</b>	Combining data assimilation and model-based optimization for managing irrigation: Some lessons learned from a simulation study and a field test <i>Rafi Linker</i>	Field comparison of nitrogen cycling between three agricultural managed groundwater recharge sites <i>Elad Levintal</i>
<b>12:45-13:30</b>	<b>Lunch break</b> (Water Research Institute Building)	

### Session 5: Plastics in agriculture (impact and treatment practices)

Conveners: Roy Posmanik and Ines Zucker (Rabin Building Hall)

<b>13:30-13:45</b>	Aging of microplastics in agricultural soils <i>Benny Chefetz</i>	
<b>13:45-14:00</b>	Polyethylene mulch in agriculture: what is it good for and can we avoid it? <i>Amnon Cochavi</i>	
<b>14:00-14:15</b>	Microplastic textile fibers accumulate in sand and are potential sources of micro(nano)plastic pollution <i>Nirrit Cohen</i>	
<b>14:15-14:30</b>	Tracking Micro- and Nano-plastics through soils using single particle ICP-MS: A new approach to bridge the analytical gap <i>Emily Tran</i>	
<b>14:30-14:45</b>	Plastics and microplastics in agriculture: The visible and invisible <i>Ji-Dong Gu</i>	
<b>14:45-15:00</b>	Microplastic contamination in sand and the associated challenges in risk assessment <i>Andrey Ethan Rubin</i>	
<b>15:00-15:15</b>	<b>Coffee break</b>	
<b>15:15-16:15</b>	<b>Panel discussion:</b> Environmental regulation in agriculture <i>Convener: Benny Chefetz, The Hebrew University of Jerusalem</i> <i>Participants: Yael Oren, Ministry of Environmental Protection, Despo Fatta-Kassinou, University of Cyprus, Iddo Kan, The Hebrew University of Jerusalem</i> <i>Avner Vengosh, Duke University</i>	



## Wednesday, March 1<sup>st</sup>

<b>8:30-9:00</b>	<b>Registration</b> (Rabin Building)
<b>9:00-9:30</b>	Soil Science in the time of carbon sequestration <i>Ronald Amundson (Invited Speaker)</i>
<b>9:30-10:00</b>	Understanding the combined effects of ozone pollution and climate change on crop yield and nutritional quality <i>Lisa Emberson (Invited Speaker)</i>
<b>10:00-10:15</b>	<b>Coffee break</b> (Rabin Building)

### Session 6: Adaptation to climate change and resulting environmental conditions

Conveners: Yael Dubowski and Eran Tas (Rabin Building Hall)

<b>10:15-10:30</b>	Back to the wild roots of wheat climate adaptability <i>Zvi Peleg</i>
<b>10:30-10:45</b>	Cereals adaptation to climate change from trait to crop level <i>Roi Ben-David</i>
<b>10:45-11:00</b>	Spectral assessment of chickpea morpho-physiological traits from space and ground <i>Ittai Herrmann</i>
<b>11:00-11:15</b>	Climatic perspective to weed management - untangling the effect of local, management and climate factors on the infestation of amaranthus species along a climatic gradient <i>Roni Gafni</i>
<b>11:15-11:30</b>	Tree hydraulic limitations and morphology, and the relative importance of latent energy dissipation in urban environments <i>Shabtai Cohen</i>
<b>11:30-11:45</b>	<b>Discussion</b>
<b>11:45-12:30</b>	<b>Lunch break</b> (Water Research Institute Building)

### Session 7: Adaptation to climate change and resulting environmental conditions (cont.)

Conveners: Yael Dubowski and Eran Tas (Rabin Building Hall)

<b>12:30-12:45</b>	The Hula valley and lake Kinneret: Ecological - rivalry or friendship? <i>Moshe Gophen</i>
<b>12:45-13:00</b>	Identification of relevant variables for agricultural drought prediction <i>Chithra NR</i>
<b>13:00-13:15</b>	Landuse land cover change detection and analysis <i>SK Pramada</i>



<b>13:15-13:30</b>	Predicting flowering levels in 'Barnea' olive trees based on winter temperatures <i>Tamar Friedlander</i>
<b>13:30-13:45</b>	New active materials based on nature-sourced polysaccharides <i>Elena Poverenov</i>
<b>13:45-14:00</b>	Controlled release of fertilizer nutrients using Fe-based metal organic frameworks (Fe-MOFs) <i>Du Changwen</i>
<b>14:00-14:15</b>	<b>Coffee break</b> (Rabin Building)

### **Session 8: Advances in the estimation of carbon sequestration and emission in the agro-environment**

Conveners: Oz Kira and Yael Laor (Rabin Building Hall)

<b>14:15-14:45</b>	Agriculture as an option for mitigating climate change <i>Carlos Eduardo Cerri (Invited Speaker)</i>
<b>14:45-15:00</b>	Evaluating the role of planting density and plant size of field crops on dry matter production and sequestration of atmospheric carbon <i>Shmulik Friedman</i>
<b>15:00-15:15</b>	Soil carbon sequestration – ways of monitoring and implementation <i>José Grünzweig</i>
<b>15:15-15:30</b>	Confronting the soil profile: Towards a process-based framework for interrogating depth dependent soil OM chemistry <i>Ronald Amundson (Invited Speaker)</i>
<b>15:30-15:45</b>	What is the limit for organic carbon accrual in Israel's soils? <i>David Yalin</i>
<b>15:45-16:00</b>	Reuse of dredged streambed sediments in agricultural fields <i>Smadar Tanner</i>
<b>16:00-16:20</b>	<b>Concluding remarks</b>

## Poster Session

Potential benefits of biochar application to tropical soils: Greenhouse gas emissions, soil improvement and crop yield   <i>Carlos Eduardo Cerri</i>
Bioremediation Of cutting fluid using petroleum remediation product   <i>Jegathambal Palanichamy</i>
Optimal control of nitrogen processes for groundwater leaching control   <i>Natasha Katsevman</i>
Silicon crystals based FTIR-ATR for the rapid monitoring of phosphorus in water coupled with the algorithms of deconvolution and partial least squares regression   <i>Du Changwen</i>
Scaling elastic and plastic deformation with porous media permeability during pressurized flow   <i>Shaimaa Sulieman</i>
Quantifying the spatial variation of labile phosphorus in the soil by spectroscopy methods   <i>Yuli Shaham</i>
Simulating water flow and solute transport at unsaturated soils with unknown initial conditions using physics-informed neural networks trained with time-lapse geoelectrical measurements   <i>Ziv Moreno</i>
Monitoring nanoparticle progression and fate in the soil using spectral induced polarization   <i>Shany Ben Moshe</i>
PGPR liquid-core capsules to increase available phosphate in soils   <i>Shir Rabinovich</i>
Integrated weed mmanagement utilizes sewage sludge by using the hydrothermal technology   <i>Matat Zohar</i>
Assessment of the temporal and spatial variability in tree canopy nitrogen content to yield Gap in Almond Orchard Using Remote Sensing   <i>Ofek Woldenberg</i>
Simulated herbivory enhances Cd phytoextraction efficiency of sunflowers   <i>Eyal Grossman</i>
On the coupling of pressurized flow and elastic expansion of artificial rocks   <i>Arnold Bachrach</i>
Evaluating the effects of environmental conditions and biotic factors on antimicrobial activity of algal biocontrol agent   <i>Bernard Ng'eno</i>
Impact of soil microbial diversity on seed microbiome and plants productivity   <i>Uttam Kumar</i>
Impacts of combined and separate land cover and climate changes on hydrologic responses of dhidhessa river basin, Ethiopia   <i>Gizachew Wedajo</i>
Protists modulate enteric bacterial communities in treated wastewater irrigated soils   <i>Utupal Anand</i>
Lateral technology transforming: Bringing an innovative technology from wastewater treatment sector into hyper-intensive aquaculture systems   <i>Ofir Menashe</i>
Performance evaluation of biochar from six types of agricultural residues in removal of textile   <i>Jegathambal Palanichamy</i>
Identifying the mechanism of complex polyphosphate hydrolysis in plant roots   <i>Natalie Toren</i>
Nutrient recovery from waste activated sludge via hydrothermal carbonization to promote sustainable development and food security   <i>Osama Khoury</i>
Applying thermodynamic framework to analyze transport self-organization due to dissolution/precipitation reaction in porous medium at varying pecelet number: Entropy, enthalpy, heterogeneity   <i>Evgeny Shavelzon</i>
Cation exchange reversibility in organic materials and natural soils   <i>Bich-Thao Nguyen</i>
Effect of water and nutrient availability on soil activity in the negev desert   <i>Martha Osei – Yeboah</i>
Real-time monitoring of various contaminant adsorption in soil and activated carbon filters using spectral induced polarization   <i>Jyoti Tyagi</i>
Effect of NPK Deficiencies on Theobroma Cacao L. Growth and Productivity   <i>Maya Weinstein</i>