

Dutch Israeli Renewable Energy Conversion and Storage

Mini Symposium

13 January 2021 11:00-13:00 IL time 10:00-12:00 NL time

Webinar through zoom

https://zoom.us/meeting/register/tJlkc-muqDltGtN8uDoXaiGsK_MB-JLRKqtL

Registration: <https://www.eventbrite.com/e/dutch-israeli-renewable-energy-generation-conversion-storage-symposium-tickets-131191759083>

Background

The rapidly growing amount of renewable energy is increasing the need for flexibility to keep supply and demand in balance. By converting and storing various renewable energy sources on a large scale in times of surplus production, its consumption can be shifted to moments in time when there is a shortage. The Netherlands is excellently positioned to realise large-scale storage with innovative conversion and storage technologies and infrastructure. This is particularly necessary in order to make efficient use of the rapidly growing amount of electricity that will soon be generated offshore and to prevent shortages occurring when the wind is not blowing, nor the sun is shining. Israel is also developing innovative energy conversion and storage technologies, as part of its ambitious goal of utilizing renewable energies for 30% of its electricity demand by 2030.

Researchers at Ben-Gurion University of the Negev (BGU) work towards achieving such goals in various directions, promoting advanced fundamental research, and searching for potential applications in the field. For example, the research scope at BGU's National Solar Energy Center of ranges from harvesting solar energy to storage, material science, optics, and surface physics. Production and utilization of renewable and alternative liquid fuels, Energy aspects in buildings and innovations in passive heating and cooling, and renewable energy systems engineering, are intensively studied in various disciplines of the Natural and Engineering Sciences. BGU also develops undergraduate and graduate multidisciplinary programs in diverse areas of sustainable resources.

The Eindhoven Institute for Renewable Energy Systems (EIRES) is the Technical University of Eindhoven's answer to the broad, multidisciplinary question that is the energy transition. EIRES facilitates the collaborative development and swift deployment of new technologies and devices by bringing together TU/e researchers working on materials, systems, and processes for energy storage and conversion.

Possible funding schemes for R&D cooperation

Green Deal Call:

https://ec.europa.eu/info/sites/info/files/research_and_innovation/events/presentations/rea2_topic_2.1_innovative_land-based_and_offshore_re_technologies.pdf and [Funding & tenders \(europa.eu\)](#) and [Horizon Europe Cluster 5](#).



Target audience

The target audience includes academic researchers as well as startups and SMEs in the field of renewable energy conversion and storage, specifically in solar energy, thermal energy and chemical/ catalytic energy storage/ fuels.

Program

11:00-13:00 IL time; 10:00-12:00 NL time

11:00-11:05

Welcome notes

- Dr. [Racheli Kreisberg](#), Innovation Attaché, Netherlands Embassy in Israel and Israeli Dutch Innovation Center ([IDIC](#))
- [Marieke Monroy](#), Deputy Head of Mission at Embassy of the Kingdom of the Netherlands in Israel
- Prof. [Raz Jelinek](#), Vice President and Dean for Research & Development, cooperation between the Netherlands and Ben Gurion University's Sustainable Energy initiative

11:05-11:30

Introduction to renewable energy activities at EIRES and at BGU and possible cooperation opportunities

Dr. [Mark Boneschanscher](#), Managing Director Eindhoven Institute for Renewable Energy Systems, Technical University of Eindhoven

Prof. [Raz Jelinek](#), Vice President and Dean for Research & Development, cooperation between the Netherlands and Ben Gurion University's Sustainable Energy initiative

11:30-11:45

Solar energy research at BGU

Prof. [Iris Visoly-Fisher](#), Dept. of Solar Energy and Environmental Physics, Swiss Institute for Dryland Environmental and Energy Research, Blaustein Institute for Desert Research, Sede Boqer campus, Ben Gurion University of the Negev

11:45-12:00

Developments in solar research at TU Eindhoven

Prof. [René Janssen](#), Molecular Materials and Nanosystems, Technical University of Eindhoven

12:00-12:15

Thermal energy conversion and storage

Prof. [Yaniv Gelbstein](#), Dept. of Materials Eng., Engineering Sciences, Ben Gurion University of the Negev

12:15-12:30

Testing of PV in relevant conditions (PV-T)

Dr. [Roland Valckenborg](#), TNO-SEAC

12:30-12:45 Chemistry of Energy storage

Prof. [Meny Shalom](#), Dept of Chemistry, Natural Sciences, Ben Gurion University of the Negev

12:45-13:00 Electrocatalysis for the synthesis of chemicals

Dr. [Marta Costa Figueiredo](#), Chemical Engineering and Chemistry, Technical University of Eindhoven

Biosketches

Dr. Mark Boneschanscher

Mark Boneschanscher is the managing director of the Eindhoven Institute for Renewable Energy Systems (EIRES). He believes that both science and industry have a crucial role to play in the energy transition. He is therefore actively involved in setting up both scientific as well as public-private collaborations in EIRES. His goal is to speed up the energy transition by industrialization of innovative renewable energy systems.

Dr. Marta Costa Figueiredo

Marta Costa Figueiredo is Assistant Professor of Electrocatalysis at Eindhoven University of Technology since April 2019. She obtained her PhD in electrocatalysis, science and technology in 2012 at the University of Alicante, Spain under the supervision of Prof. Juan Feliu. After that, she was a postdoctoral researcher at different Universities in Europe such as Aalto University (Finland), Leiden University and University of Copenhagen. Before joining TU/e, Marta worked in the industry as Jr Scientist at Avantium (Amsterdam). In Eindhoven, her research is devoted to electrocatalysis and electro(catalytic)synthesis for sustainable processes and production of high value chemicals.

Prof. Yaniv Gelbstein

Prof. Yaniv Gelbstein is specialized in thermoelectric (TE) heat-to-electricity conversion, since 1997. In the recent years, after serving as the Head of the Unit of Energy Engineering, he serves as the Head of the Department of Materials Engineering, both at Ben-Gurion University of the Negev. The TE research group headed by Prof. Gelbstein is fully dedicated on achieving the entire supply chain starting from basic science activities on development the next novel thermoelectric materials, including silicides, half-Heusler and IV-VI (namely, PbTe, GeTe, SnTe) alloys, reaching high TE figure of merit, ZT, values of up to ~2.2, to the development of highly efficient TE prototype converters, and hybrid photovoltaic-thermoelectric systems.

Prof. René Janssen

René Janssen is a university professor in chemistry and physics at the Eindhoven University of Technology working on molecular semiconductors and their application in opto-electronic devices. His research combines design and synthesis of new materials, with optical spectroscopy, electrochemistry, morphological studies, and the fabrication and opto-electronic characterization of devices. In recent years focus has been on the developing organic and perovskite solar cells, solar fuels, and energy storage.

Prof. Raz Jelinek

Raz Jelinek completed his bachelor's degree in chemistry (summa cum Laude) at the Hebrew University of Jerusalem in 1988, continued his doctorate in chemistry at the University of California, Berkeley (1993), and was a Cancer Research Institute postdoctoral fellow at the University of Pennsylvania. In 1996 he took a faculty position at the Department of Chemistry at BGU and since 2019 he is the Vice President and Dean for R&D at BGU. Raz's research interests range from the molecular mechanisms of amyloid diseases, through the development of chemical and biological sensors, food chemistry, nanoparticles, advanced optical materials, and energy storage systems.

Prof. Menny Shalom

Menny was born in 1979 in Tel Aviv, Israel. Menny received his BSc in Chemistry in 2007 from Bar-Ilan University. Afterward, he continued his MSc and PhD in the lab of Prof. Arie Zaban in Bar-Ilan University, researching quantum dot sensitized solar cells. For his postdoc, he joined the Max Planck Institute of Colloids and Interfaces (MPI), Germany, as a Minerva fellowship fellow. From 2013 to 2016, he was appointed as a group leader in MPI and since the end of 2016 he is a Professor at the Ben-Gurion University of the Negev, Israel. His group is focused on the synthesis of new materials for photo-electrochemical cells and as electrocatalysts for solar fuel production.

Dr. Roland Valckenborg

Dr.ir. Roland Valckenborg started his professional career in 2001 as product developer in the R&D-department of Canon-Océ, a large printer multinational, working on a broad range of topics from crazy ideas (TRL 1) till prepare for certification (TRL 8). In 2009, he shifted his career to Renewable Energies and founded both an NGO and a company in Tanzania. He started with locally built small scale wind turbines for empowering the poor people in the off-grid rural areas. Growing the company with high-end solar-wind-diesel hybrid systems for local industry and tourism. In 2013, he returned to the Netherlands to focus on solar energy applications. As project leader and business developer of TNO, he has worked on a variety of new innovative projects in the built environment. Moreover, he is the founder and project leader of the outdoor performance research facility called SolarBEAT, in Eindhoven, the Netherlands.

Prof. Iris Visoly-Fisher



Iris Visoly-Fisher is the head of the Department of Solar Energy and Environmental Physics, at the Swiss Institute for Dryland Environmental and Energy Research, Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Sede Boqer campus. Her research interests include materials for renewable energy production and storage, photovoltaics, optoelectronics and organic electronics; surface science; and characterization through a 'bottom up' approach – from the properties of a single building block to understanding the system's behavior.