

Tuesday, 5 November 2019

09:30 – 10:00 **Welcome Addresses**
Prof. Dr. Mahmoud Sakr, *President of the Academy of Scientific Research and Technology, Egypt & AGYA Advisory Board Member*
Prof. Dr. Ahmed Gaber, *President of Fayoum University, Egypt*

10:00 – 10:15 **Introductory Words**
Dr. Mahmoud Abdel-Hafiez, *Frankfurt University, Germany / Havard University, USA (AGYA Member)*

10:15 – 11:00 **Keynote Speech**
Advances in Membranes for Water and Energy Technologies
Prof. Dr. Mathias Ulbricht, *University of Duisburg-Essen, Germany*
Chair: Dr. Derrick VanGennep

11:00 – 11:15 I COFFEE BREAK

11:15 – 12:00 **Keynote Speech**
Nanofabrication by Current-Stimulated Atomic Migration
Prof. Dr. Alejandro Silhanek, *Liege University, Belgium*
Chair: Dr. Mahmoud Abdel-Hafiez

12:00 – 13:00 I LUNCH BREAK

13:00 – 13:45 **Panel Discussion:**
Motivational Factors behind Scientific Research in Material Sciences: Lessons from Havard University, Liege University and ICBA Dubai

Panellists:
Dr. Tarifa Alzaabi, *International Center for Biosaline Agriculture, UAE*
Prof. Alejandro Silhanek, *Liege University, Belgium*
Dr. Derrick VanGennep, *Harvard University, USA*
Moderator: Dr. Ali Abdou

13:45 – 14:15 I COFFEE BREAK

14:15 – 15:45 **Panel I: Emergent Materials/Water-Energy Nexus**
Chair: Prof. Dr. Ahmed Maarouf

14:15 – 14:45 **Manipulating Graphene Properties: Towards Advanced Sensing Technologies**
Prof. Dr. Amal Kasry, *BUE, Egypt*

14:45 – 15:15 **Graphene Spintronics: Prospects & Innovations**
Prof. Dr. Venkata Matta, *Uppsala University, Sweden*

15:15 – 15:45 **Flexile Laser Reduced Graphene: Preparation and Applications**
Prof. Dr. Ahmed Abdelmoneim, *EJUST, Egypt*

15:45 – 16:00 I COFFEE BREAK

16:00 – 17:30 **Panel II: Emergent Materials/Water-Energy Nexus**
Chair: Dr. Mohammed Rasool Qtaishat

16:00 – 16:30 **Emerging Smart Nanomaterials for Advanced Nanomedicine Applications**
Prof. Dr. Ibrahim Elsherbiny, *Zewal City, Egypt*

16:30 – 17:00 **Water Flow Performance of Highly Packed and Aligned Double-Walled Carbon Nanotube Membranes**
Prof. Dr. Yasuhiko Hayashi, *Okayama University, Japan*

17:00 – 17:30 **An Innovative Hollow Fiber Air Gap Membrane Distillation (AGMD) Process with Internal Heat Recovery and Reduced Footprint**
Dr. Alla Alpatove, *KAUST, Saudi Arabia*

17:30 – 18:45 **Poster Session**
Arab and German Students

Wednesday, 6 November 2019

09:00 – 09:45 **Keynote Speech**
Probing Materials Physics Under Extreme Conditions
Dr. Derrick VanGennep, *Harvard University, USA*
Chair: Dr. Mahmoud Abdel-Hafiez

09:45 – 10:30 **Keynote Speech**
Design and Synthesis of MOFs and MOFs/rGO Hybrid Materials as a New Generation Energy Solution
Prof. Dr. Shaikh Mobin, *Indian Institute of Technology Indore, India*
Chair: Prof. Dr. Ahmed Khalil

10:30 – 11:00 I COFFEE BREAK

11:00 – 12:00 **Panel III: Emergent Materials/Water-Energy Nexus: Material Properties**
Chair: Dr. Ramzy Abdelaziz

11:00 – 11:20 **Magnetocaloric Effect: The Current Situation**
Dr. Ridha Skini, *Uppsala University, Sweden*

11:20 – 11:40 **Crystal Growth: How to Get Large Single Crystals**
Dr. Dimitry Chareev, *Moscow State University, Russia*

11:40 – 12:00 **Materials Preparation for the Future Hydrogen Economy: Photoelectrochemical Water Splitting**
Prof. Mmantsae Diale, *Pretoria University, South Africa*

12:00 – 13:00 I LUNCH

13:00 – 14:00 **Panel IV: Emergent Materials/Water-Energy Nexus**
Chair: Prof. Dr. Ali Abdou

13:00 – 13:20 **The Water-Food-Energy Nexus in Developing Countries: Understanding Synergies and Conflicts for Achieving Nutrition**
Dr. Assem Abu Hatab, *Swedish University of Agricultural Sciences, Sweden (AGYA Alumnus)*

13:20 – 13:40 **Utilizing the Physical Properties of Graphene-Based Materials for Technological Applications**
Prof. Dr. Ahmed Maarouf, *IRMC, Imam Abdulrahman Bin Faisal University, Saudi Arabia*

13:40 – 14:00 **Investigations of Earth-Abundant Nanomaterials for Solar Fuel Generation**
Prof. Dr. Nageh Allam, *American University Cairo, Egypt (AGYA Member)*

14:00 – 14:30 I COFFEE BREAK

14:30 – 16:10 **Panel V: Emergent Materials/Water-Energy Nexus**
Chair: Prof. Dr. Nageh Allam

14:30 – 14:50 **Advances in Membrane Process Technology for Water Treatment**
Prof. Stefan Panglisch, *University of Duisburg-Essen, Germany*

14:50 – 15:10 **Designing Nanocomposites of Functional Oxides**
Dr. Tapati Sarkar, *Uppsala University, Sweden*

15:10 – 15:30 **The NANO Maker: Leidenfrost Chemistry**
Dr. Ramzy Abdelaziz, *Aalto University, Finland*

15:30 – 15:50 **Novel Mixed Matrix Nano-Composite Membranes for Desalination by Membrane Distillation**
Dr. Mohammed Rasool Qtaishat, *Jordan University, Jordan*

15:50 – 16:10 **Plasma Processing of Nanomaterials: An Industrial Perspective**
Prof. Dr. Ali Abdou

16:10 – 16:30 | COFFEE BREAK

16:30 – 18:00 **Poster Session**
Arab and German Students

Thursday, 7 November 2019

09:00 – 09:15 **Warm-Up: "Sport with Materials"**
Dr. Mohamed Alkatan, *Public Authority for Applied Education and Training, Kuwait (AGYA Member)*

09:15 – 10:00 **Keynote Speech**
Howardevansites $ACuFe_2(VO_4)_3$ as New Peculiar Multiferroic Materials
Prof. Dr. Olga Volkova, *Moscow State University, Russia*
Chair: Dr. Mahmoud Abdel-Hafiez

10:00 – 10:30 | COFFEE BREAK

10:30 – 11:15 **Keynote Speech**
On (Dis)order in the Quantum World: Competing Ground States in Correlated Quantum Materials
Prof. Dr. Ruediger Klingeler, *Heidelberg University, Germany*
Chair: Dr. Mahmoud Abdel-Hafiez

11:15 – 11:30 **Closing Words & Poster Prize Award**
Poster Award Committee:
Prof. Dr. Ali Abdou
Prof. Dr. Ahmed Maarouf
Dr. Derrick VanGennep
Prof. Dr. Venkata Matta
Dr. Mahmoud Abdel-Hafiez

11:55 – 12:30 | CLOSING WORDS & POSTER PRIZE AWARD

Workshop Organizers:

Prof. Dr. Ahmed Saad Goma Khalil

Fayoum University, Egypt
AGYA Member

Dr. Mahmoud Abdel-Hafiez

Goethe University Frankfurt, Germany
AGYA Member

Dr. Phillip Blechinger

Reiner Lemoine Institut, Germany
AGYA Member

Prof. Dr. Nageh Allam

American University Cairo, Egypt
AGYA Member

Local Contact:

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Workshop Venue:

Academy of Scientific Research & Technology (ASRT)

101 Kasr al Aini Street, Kasr al Aini
Cairo, Egypt

Workshop Hotel:

Pyramisa Suites Hotel Cairo

60 Giza Street, Dokki
Cairo, Egypt.

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International Workshop of the Arab-German Young Academy of Sciences and Humanities (AGYA) **Emergent Materials & Water Energy Nexus: Concepts, Methodologies and Future Applications**

5-7 November 2019

Academy of Scientific Research & Technology, Cairo, Egypt

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