

International and Interdisciplinary
Online Workshop of the Arab-German Young Academy
of Sciences and Humanities (AGYA)

Materials for Energy

24-25 October 2020



📅 **Saturday, 24 October 2020**

9:30 – 10:00 **Introductory Words**
Prof. Dr. Ahmed Sakhrieh
American University of Ras Al Khaimah, UAE (AGYA Alumnus)
Dr. Mahmoud Abdel-Hafiez
Goethe University Frankfurt, Germany (AGYA Member)

10:00 – 11:00 **Public Keynote Speech I**
Electrode Materials for Lithium Ion Batteries
Prof. Dr. Rüdiger Klingeler
Heidelberg University, Germany
Chair: Prof. Dr. Lalla Btissam Drissi
Mohammed V University-Agdal, Morocco (AGYA Alumna)

11:00 – 11:15 | COFFEE BREAK

11:15 – 12:30 **Low Dimensional Materials for Energy Applications: Theoretical and Computational Modelling**
Prof. Dr. Ahmed Maarouf
Imam Abdulrahman Bin Faisal University, Saudi Arabia
Chair: Dr. Mahmoud Abdel-Hafiez
Goethe University Frankfurt, Germany (AGYA Member)

12:30 – 13:30 | LUNCH BREAK

13:30 – 14:45 **Predicting Materials for Energy Application**
Prof. Dr. Olle Eriksson
Uppsala University, Physics Department, Sweden
Chair: Prof. Dr. Ahmed Khalil
Japan University of Science and Technology, Egypt (AGYA Member)

14:45 – 15:00 | COFFEE BREAK

15:00 – 16:30 **Plasma Science and Engineering in Material and Energy: An Industrial Perspective**
Prof. Dr. Ali Abdou
Wireline & Perforating Technology, Halliburton, USA
Chair: Dr. Ramzy Abdelaziz
Aalto University, Finland

16:30 – 16:45 | COFFEE BREAK

16:45 – 18:00 **Physics of 2D Quantum Materials from Scanning Probe Microscopy Perspective**
Prof. Dr. Goran Karapetrov
Physics Department, Drexel University, USA
Chair: Dr. Mahmoud Abdel-Hafiez
Goethe University Frankfurt, Germany (AGYA Member)

📅 **Sunday, 25 October 2020**

9.15 – 10:15 **Public Keynote Speech II**
Towards Low Energy Consumption Devices Targeted Material Tweaking by Electromigration
Prof. Dr. Alejandro Silhanek
University of Liege, Belgium
Chair: Dr. Mahmoud Abdel-Hafiez
Goethe University Frankfurt, Germany (AGYA Member)

10:15 – 10:30 | COFFEE BREAK

10:30 – 11:30 **Materials Characterization: SEM Principles**
Dr. Ramzy Abdelaziz
Aalto University, Finland
Chair: Prof. Dr. Ahmed Maarouf
Imam Abdulrahman Bin Faisal University, Saudi Arabia

11:30 – 11:45 | COFFEE BREAK

11:45 – 12:45 **Materials Characterization: Scanning Probe Microscopy**
Prof. Dr. Joris Van de Vondel
KU Leuven University, Belgium
Chair: Prof. Dr. Alejandro Silhanek
University of Liege, Belgium

12:45 – 13:30 | LUNCH BREAK

13:30 – 14:30 **Photo-induced Dynamics in Energy Related Materials**
Dr. Mohamed Abdellah
Uppsala University, Sweden
Chair: Dr. Mahmoud Abdel-Hafiez
Goethe University Frankfurt, Germany (AGYA Member)

14:30 – 14:45 | COFFEE BREAK

14:45 – 16:00 **Metallic Hydrogen Produced on Earth Using Laboratory Megabar Pressure**
Prof. Dr. Issac Silvera
Harvard University, Physics Department, USA
Chair: Dr. Mahmoud Abdel-Hafiez
Goethe University Frankfurt, Germany (AGYA Member)

16:00 – 16:15 | COFFEE BREAK

16:15 – 18:00 **Wrap-Up Discussion**
Chair: Dr. Mahmoud Abdel-Hafiez
Goethe University Frankfurt, Germany (AGYA Member)
& Prof. Dr. Ahmed Sakhrieh
American University of Ras Al Khaimah, UAE (AGYA Alumnus)

AGYA Project Partners

Prof. Dr. Ahmad Sakhrieh

American University of Ras Al Khaimah, UAE (AGYA Alumnus)

Dr. Mahmoud Abdel-Hafiez

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