ΘΕΜΑ: Measuring Site Specific Kinetics on Catalytic Metal Surfaces using Ion Imaging

ΗΜΕΡΟΜΗΝΙΑ: Δευτέρα, 20 Σεπτεμβρίου 2021

ΤΟΠΟΣ: Αμφιθέατρο Συνεδριακού ΙΤΕ/ΙΕΧΜΗ*

Θα υπάρχει η δυνατότητα παρακολούθησης του σεμιναρίου μέσω τηλεδιάσκεψης (link: https://iceht-forth.webex.com/meet/T.N.Kitsopoulos_seminar)

ΩΡΑ: 12:00

* Σημαντική ενημέρωση:
• Δια ζώσης παρακολούθηση του σεμιναρίου μόνο για εμβολιασμένους και νοσήσαντες (έως 6 μήνες από τη διάγνωση). Έλεγχος βεβαίωσης εμβολιασμού ή νόσησης (και έλεγχος ταυτοπροσωπικών) στην είσοδο του αμφitheάτρου με την εφαρμογή covid free app.
• Υποχρεωτική χρήση μάσκας (σε όλους τους κλειστούς χώρους).
• Εκδήλωση ενδιαφέροντος για παρακολούθηση σεμιναρίου δια ζώσης έως τη Δευτέρα 20 Σεπτεμβρίου 2021 στις 10.00 π.μ. στο e-mail sny@iceht.forth.gr για την κατανομή των παραδοτουμένων 15 θέσεων της αίθουσας. Θα ενημερωθούν με γραπτό μήνυμα αν έχουν προτεραιότητα για τη δια ζώσης παρακολούθηση του σεμιναρίου.
• Θα γίνεται θερμομέτρηση στην είσοδο του αμφitheάτρου.

Σωτήρης Σιώκας, Τεχνικός Ασφαλείας ΙΤΕ/ΙΕΧΜΗ
I will introduce how to apply slice ion imaging to study the dynamics and kinetics of reactions on surfaces. The first demonstration involves the study the site specific oxidation of CO on Pt(111) and Pt(332) crystals. This new method allows for measurements of the “true kinetic traces” i.e., CO2 product flux vs. reaction time. Because the symmetry and orientation of the active site strongly influences the speeds and desorption angles of newly formed products, we are able to identify for the first time, the elementary reactions steps and extract the respective rate constants (activation energies and prefactors) for this benchmark reaction of heterogeneous catalysis, thus settling open questions that spanned more than 3 decades.
I have been serving as Professor of Physical Chemistry at the University of Crete since 1994. After graduating from high school in Nafpaktos, I studied Chemistry at the University of Illinois at Chicago and graduated with Highest Honors in 1986. I then studied under Prof. Dan Neumark at the University of California at Berkeley, graduating in 1991 with a PhD in Physical Chemistry. Following two years of postdoctoral research at Sandia National Laboratories in Livermore California with Dr. David Chandler, I returned to Greece to join the Faculty at the University of Crete and the Institute of Electronic Structure and Lasers at the Foundation for Research and Technology-Hellas. From 2013 I have an affiliation with the Institute of Physical Chemistry at the University and the Max Planck Institute of Biophysical Chemistry, in Göttingen Germany.

My main research interests are in the field of chemical dynamics. I have made well-recognized important contributions to the understanding of the state-to-state Photodissociation dynamics of molecules and clusters that helped shape the field. My group is well-known for pioneering, in 2001, a new variant of ion imaging and velocity mapping that is now termed Slice Imaging. This breakthrough method shaped the field as it not only led both to enhancements in the velocity resolution attainable in photofragment imaging experiments but, even more, in the accuracy and ease with which the spatial anisotropy parameter for photofragments can be extracted as compared to the competition.

From 2013 as a group leader at the Max Planck Institute of Biophysical Chemistry, in Göttingen Germany, I have built a new experimental operation looking at fundamental processes on surfaces under extreme conditions. My new team has demonstrated application for the first time that the novel imaging techniques, developed on Crete, can be implemented towards studying the underlying chemical dynamics for such processes as heterogeneous catalysis and photocatalysis.

For my scientific accomplishments I received the Basic Science Award from the Bodossaki Foundation (2004) and the Friedrich von Bessel Award from the Alexander von Humboldt Foundation, and more recently (2005) the Advanced Grant Research Award from the European Research Council (ERC) (2019)

In addition to my research career, I have been active in public service, both at the University of Crete and at IESL-FORTH. I’ve served on the scientific council of IESL from 2000-2014. In the Chemistry department, I served on the undergraduate committee for 15 years, where I organized and reformatted the undergraduate curriculum. I served as Chemistry Department Chair (2006-2008) before I to take up the position of Vice Rector of Student affairs and University Infrastructures between 2007 and 2010.