

DAY 1

Keynote Forum



8th Edition of International Conference on
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August 27-28, 2018 | Zurich, Switzerland

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Zurich, SwitzerlandMahesh Narayan, J Org Inorg Chem 2018, Volume 4
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A β , A RISK FACTOR FOR PARKINSON'S PATHOGENESIS: MECHANISMS AND PREVENTION

Mahesh Narayan

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Amyloid beta (A β) aggregation is generally associated with Alzheimer's onset. We have demonstrated that incubation of dopaminergic SH-SY5Y cells with an A β peptide fragment (an 11-mer composed of residues 25–35; A β (25–35)) results in elevated intracellular nitrosative stress and induces chemical mutation of protein disulfide isomerase (PDI), an endoplasmic reticulum-resident oxidoreductase chaperone. Furthermore, A β (25–35) provokes aggregation of both the minor and major biomarkers of Parkinson's disease, namely, synphilin-1 and α -synuclein, respectively. Importantly, fluorescence studies demonstrate that A β (25–35) triggers colocalization of these Parkinsonian biomarkers to form Lewy-body-like aggregates, a key and irreversible milestone in the neurometabolic cascade leading to Parkinson's disease. In addition, fluorescence assays also reveal direct, aggregation-seeding interactions between A β (25–35), PDI and α -synuclein, suggesting neuronal pathogenesis occurs via prion-type cross-transfectivity. These data indicate that the introduction of an Alzheimer's-associated biomarker in dopaminergic cells is proliferative, with the percolative effect

exercised via dual, independent, Parkinson-pathogenic pathways, one stress-derived and the other prion-like. The results define a novel molecular roadmap for Parkinsonian transfectivity via an Alzheimeric burden and reveal the involvement of PDI in amyloid beta induced Parkinson's. We have also explored the ability of phytochemicals to intercept A β -driven Parkinson's pathogenesis via multiple mechanisms. Results from these studies will be discussed.

Biography

Mahesh Narayan has completed his PhD in Biophysics at The Ohio State University and pursued Postdoctoral studies at Cornell University. Currently, he is a Professor of Chemistry at The UTEP and serves on the Editorial Board of *PLoS One* and *Cell Biochemistry and Biophysics*. He has published extensively in the areas of protein folding, Parkinson's disease and pedagogical inroads in chemistry.

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RADIOACTIVE VEGETATION OF THE FUKUSHIMA DAIICHI NUCLEAR POWER PLANT ACCIDENT 7 YEARS LATER IN JAPAN

Tazaki Kazue

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Radioactive vegetation and crops was found in Minami-Soma, Fukushima, Japan, 7 years after the Great East Japan Earthquake, on March 11, 2011. The leak of radioactive ¹³⁴Cs, ¹³⁷Cs, ⁴⁰K, ⁸⁹Sr, ⁹⁰Sr and traces of some radionuclides which originated from the Fukushima Daiichi Nuclear Power Plant (FDNPP) accident were found in many kinds of vegetations collected from Minami-Soma, Fukushima, which is 25 km away from FDNPP. We document the mineralogy, the chemistry, and the micro-morphology, using a combination of micro techniques. Quantitative analyses of vegetation and crops, using Ge semiconductor detector and energy-dispersive x-ray fluorescence analyses (ED-XRF), x-ray powder diffraction analyses (XRD), and scanning electron microscopy equipped with energy dispersive spectroscopy (SEM-EDS). The objective of this contribution is to illustrate the ability of various vegetation with minerals and microorganisms which are capable of absorbing both radionuclides and stable isotopes from polluted paddy soils, water and plants in extreme conditions near contaminated Tetsuzan dam in Minami Soma, Fukushima in July 16-18 in 2018. In addition, we found deformed pine tree and pine cone in Minami-Soma City, associated with high radioactivity of fallen

leaves and moss. The results obtained here provide evidence of radiation reloaded and ecological impacts of the FDNPP, 7 years later.

Biography

Tazaki Kazue has completed her PhD in Doctor of Science (Geology, Mineralogy), Tokyo Kyoiku University, Japan. She has worked as Post Doctorate Visiting Fellow at Geological Survey of Canada, ISPG in Calgary, Research Associate at McGill University in Montreal, and Senior Research Associate at The University of Western Ontario, London, Ontario, Canada. She has worked as Associate Professor, at Shimane University, and as Professor, at Kanazawa University, Japan. She was a Visiting Professor at Lac Hong University, in Vietnam and Visiting Professor at the University of Dodoma, Tanzania. She has published more than 500 papers of Environmental Sciences. She got many awards from the Geological Society of Japan, Natural Sciences and Engineering Research Council of Canada, Mineralogical Society of Japan, Clay Mineralogical Association of Japan, Ishikawa TV, the Earth Science Award of Chigaku Dantai Kenkyu-Kai, and the award of International Solopetmist Society Contribution.

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DAY 2

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POLYMER- PROTEIN INTERFACE AND HIGH THROUGHPUT SCREENING FOR PROTEIN STRUCTURAL STABILITY

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Role of polymers is substantial in delivering protein drugs. Delivery of proteins; however, is challenging due to complex interactions including hydrophobic interaction, electrostatic interaction, hydrogen bonding and interaction between adsorbed protein molecules which may lead to loss of protein stability. Several factors that affect these interactions include polymer type, surface charge, pH and ionic strength of the solvent system, presence of competing proteins. It is critical to attain mechanistic understanding of adsorption of proteins at solid/liquid interfaces to deliver the protein in safe and effective form at the site of action. Use of different polymers intended for drug delivery and analytical techniques such as dynamic light scattering spectroscopy, fluorescence spectroscopy and circular dichroism spectroscopy is demonstrated to screen the factors for development of stable dosage form. Evaluation of the changes in secondary and tertiary structure of recombinant human growth hormone (r-hGH) upon adsorption at biodegradable Poly (lactide-

co-glycolide) PLGA nanoparticles of different hydrophobicity as a function of pH is illustrated to understand the nature of the interactions that govern the adsorption of the protein on the polymer, leading to successful design of sustained delivery systems.

Biography

Dr Vaishnavi Parikh has completed her PhD in Pharmaceutics from Philadelphia College of Pharmacy, University of Sciences. She has more than eight years of experience working as a Formulation Scientist in the pharmaceutical industry and currently works as a Manager of Product development at Genus Lifesciences Inc. She has published several papers in reputed journals; presented at several international conferences; has been serving as a reviewer on six reputed journals and also an editor for the journal, Insight- Automatic Control.

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August 27-28, 2018
Zurich, SwitzerlandLinghai Xie, J Org Inorg Chem 2018, Volume 4
DOI: 10.21767/2472-1123-C5-013**ORGANIC NANOSYNTHESIS OF MACROSCOPIC
WINDOW GRIDS AT MOLECULAR SCALE****Linghai Xie**

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In the past, our researches focus on a multiscale/ hierarchical chemistry of organic devices suffering from a ten-year journey in the molecular world starting from the synthesis of fluorene via supramolecular approaches to intermolecular motifs, nanoscale aggregate, mesoscale orientation film as well as multilayered heterojunction in order to solve the technology bottleneck in organic/ plastic electronics. Although we developed the organic wide-bandgap semiconductors that cannot be comparable with inorganic performance, a whole node-network and systematic picture of the diverse and multiscale chemical world has been impressed that results in the belief of self-similar epistemology where microscopically molecular worlds could not be mysterious that just resemble human scale society ever since. Our target is to clone all the MEIC aspects of macroscopic worlds at molecular scale that is the effective pathway to activate molecular intelligence and consciousness. Herein, we start from the human-scale window grids as a typical static paradigm that you can see everywhere and that are around you in daily life. Chinese ancient window grids are especially aesthetic besides usefulness for life ever that also record and impress the traditional culture and philosophy of Fang Yuan. They inspired us differentiating from the well-known macrocycles and exploring the unprecedented nano-grid[n]arenes that include a huge family

of various unit nanogrids, digrids, multigrids and polygrids via a bottom-up molecular installing nanotechnology (MINT). This kind of hierarchical nano-gridarenes and their nanopolymers will be a diverse platform of covalently multiscale and cross-scale meta-molecules that would be advanced nanomaterials with multiscale precision to face the challenge of plastic electronics and organo-robots in the background of the era of consciousness (EOC) from carbon to robot.

Biography

Linghai Xie has completed his PhD in Macromolecular Chemistry and Physics by Fudan University in 2006 and Senior Visiting Scholar studies at Nanyang Technological University (NTU) during 2012-2013. He won the NSFC Award for Excellent Young Scholar in 2013. He has worked as Professor of Organic Hierarchical Chemistry at Nanjing University of Posts & Telecommunications. He serves as a Director of the Center for Molecular Systems & Organic Devices at the Institute of Advanced Materials. His research contributions include one-pot protocol to spirofluorenes (especially spirofluorenexanthene, SFX), Synergistically Molecular Attractor-Repulsor Theory (SMART), nano-grid[n]arenes and molecular multimedia. He has published more than 180 papers in reputed journals and has been cited by more than 2900.

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