

## Education

- PhD Physical Chemistry , Virginia Commonwealth University, Richmond, VA, USA. (2011)
- MS Physical Chemistry, Cairo University, Cairo, Egypt. (2005)
- BS Chemistry, Cairo University, Cairo, Egypt (1997)

## Awards:

- Altria Fellowship, 2010-2011
- GM Scholarship 2007-2010
- The Egyptian Academy of Science's Scholarship

## Grants:

- Synthesis and Characterization of TiO<sub>2</sub>/Metal nanoparticles for energy applications. 50 KSAR, Jan. 2014.
- Functionalized metal/metal-oxides/graphene nanocomposites for solar renewable energy. August, 2014.

## Selected Research Publications:

- Attah, Isaac; Platt, Sean P; Soliman, Abdel-Rahman; Mautner, Michael; El-Shall, M. Samy. Covalent and Electrostatic Bonds between Aromatic Hydrocarbons and Heterocyclics: Dimer Ions Containing Benzene, Pyridine and Pyrimidine, *to be submitted*.
- Soliman A-R, Attah IK, Hamid AM, El-Shall MS. Growth kinetics and formation mechanisms of complex organics by sequential reactions of acetylene with ionized aromatics. *International Journal of Mass Spectrometry* **2014**.
- Soliman, Abdel Rahman; Issac, Attah; Hamid, Ahmed; Momoh, Paul; El-Shall, M. Samy, Formation of Nitrogen-Containing Polycyclic Cations by Gas Phase and Intracuster Reactions of Acetylene with the Pyridinium and Pyrimidinium Ions, *J. Am. Chem. Soc.*, **2013**, *135* (1), pp 155–166.
- Abdel-Rahman Soliman, Ahmed M Hamid, Paul O. Momoh, Lauren Gallagher, Samuel A. Abrash and M. Samy El-Shall, Formation of Complex Organics in the Gas Phase by Sequential Reactions of Acetylene with the Phenylum Ion, *Journal of Physical Chemistry A*, Volume: 116 Issue: 36, **2012**, Pages: 8925-8933.
- Ahmed M. Hamid; Abdel-Rahman Soliman; M. Samy El-Shall, Assembly of HCN Hydrogen Bonding Chains in the Gas Phase. Binding Energies and Structures of Phenylacetylene<sup>+</sup>(HCN)<sub>n</sub> Clusters, n = 1-4, *Chem. Phys. Lett.* Volume: 543 Pages: 23- 27, **2012**,
- Ahmed M. Hamid, Abdel-Rahman Soliman, and M. Samy El-Shall, Stepwise Association of Hydrogen Cyanide and Acetonitrile with the Benzene Radical Cation: Structures and Binding Energies of (C<sub>6</sub>H<sub>6</sub><sup>•+</sup>)(HCN)<sub>n</sub>, n=1-6 and (C<sub>6</sub>H<sub>6</sub><sup>•+</sup>)(CH<sub>3</sub>CN)<sub>n</sub>, n=1- 4, *Journal of Physical Chemistry A*, June, **2012**.
- Abdel-Rahman Soliman, Ahmed M. Hamid, Samuel A. Abrash, M. Samy El-Shall, Unconventional ionic hydrogen bonds: CH<sup>+</sup>...π(C≡C) binding energies and structures of Benzene<sup>+</sup>(acetylene)<sub>1-4</sub> clusters. *Chemical Physics Letters*, Volume: 523 , Pages: 25-33, **2012**.
- Paul O. Momoh, Ahmed M. Hamid, Abdel-Rahman Soliman, Samuel A. Abrash, M. Samy El-Shall, Structure of the C<sub>8</sub>H<sub>8</sub><sup>•+</sup> ion formed by electron impact ionization of acetylene clusters. Evidence for a (Benzene<sup>•+</sup>.Acetylene) complex. *J. Phys. Chem. Lett.*, Volume: 2 Issue: 19 Pages: 2412-2419 , **2011**.

- Ahmed M. Hamid, Abdel-Rahman I. Soliman and M. Samy El-shall. Formation of complex organics by gas phase and intracuster ion-molecule reactions involving acetylene and hydrogen cyanide. Gordon Research Conference, Galveston, TX, USA. February, **2011**.
- Soliman, Abdel-Rahman; El-Shall, M. Samy. Gas phase sequential reactions of pyridine and pyrimidine radical cations with acetylene: Evidence for nitrogen containing covalent cyclic adducts. 240th ACS National Meeting & Exposition, Boston, Massachusetts, USA. August 22-26, **2010**.
- Soliman, Abdel-Rahman; Hamid, Ahmed; Momoh, Paul; El-Shall, M. Samy. New pathways for the formation of complex organics by gas phase and intracuster ionmolecule reactions. 238th ACS National Meeting, Washington, DC, United States, August 16-20, **2009**.
- Paul O. Momoh, Abdel-Rahman Soliman and M. Samy El-Shall, Formation and Growth of Complex Organics by Gas Phase and Intracuster Reactions, 2009 Conference on Ion Chemistry and Mass Spectrometry January 16–18, **2009**.
- Hamid, Ahmed; Soliman, Abdel-Rahman; El-Shall, M. Samy. Gas phase hydration of organic ions: Phenylum and benzonitrile cations. 238th ACS National Meeting, Washington, DC, United States, August 16-20, **2009**.
- Momoh, O. Paul; Soliman, Abdel-Rahman; Meot-Ner, Michael; Ricca, Alessandra; El- Shall, M. Samy, Formation of Complex Organics from Acetylene Catalyzed by ionized Benzene. *J. Am. Chem. Soc.* **2008**, 130, 12848.

#### Meetings & Conferences

- Ahmed M. Hamid, Abdel-Rahman I. Soliman and M. Samy El-shall. Formation of complex organics by gas phase and intracuster ion-molecule reactions involving acetylene and hydrogen cyanide. Gordon Research Conference, Galveston, TX, USA. February, 2011.
- Soliman, Abdel-Rahman; El-Shall, M. Samy. Gas phase sequential reactions of pyridine and pyrimidine radical cations with acetylene: Evidence for nitrogencontaining covalent cyclic adducts. 240th ACS National Meeting & Exposition, Boston, Massachusetts, USA. August 22-26, 2010.
- Soliman, Abdel-Rahman; Hamid, Ahmed; Momoh, Paul; El-Shall, M. Samy. New pathways for the formation of complex organics by gas phase and intracuster ionmolecule reactions. 238th ACS National Meeting, Washington, DC, United States, August 16-20, 2009.
- Paul O. Momoh, Abdel-Rahman Soliman and M. Samy El-Shall, Formation and Growth of Complex Organics by Gas Phase and Intracuster Reactions, 2009 Conference on Ion Chemistry and Mass Spectrometry January 16–18, 2009.
- Hamid, Ahmed; Soliman, Abdel-Rahman; El-Shall, M. Samy. Gas phase hydration of organic ions: Phenylum and benzonitrile cations. 238th ACS National Meeting, Washington, DC, United States, August 16-20, 2009.

#### Research Interests:

- Gas phase ion Chemistry.
- Nanostructured materials for energy production.
- Catalysis

#### Professional Experience

- 2013 – present Assistant Professor of Chemistry, Alfaisal University.
- 2012 – 2013: Assistant Professor of Chemistry, King Saud University.
- 2011 – 2012: Teaching Adjunct, Virginia Commonwealth University(VCU), Richmond, Virginia, (USA).