RNDr. Milan Sykora, MBA, PhD.
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Employment History:

- 2019-present ERA Chair, Director, Laboratory for Advanced Materials, Comenius University, Bratislava, Slovakia
- 2011-2018 Scientist, Los Alamos National Laboratory (LANL), Los Alamos, NM
- 2009-2011 Thrust Leader, Center for Advanced Solar Photophysics, LANL, Los Alamos, NM
- 2006-2011 Technical Staff Member, Los Alamos National Laboratory, LANL, Los Alamos, NM
- 2003-2006 Visiting Scientist, LANL, Los Alamos, NM

Education:

- 2000-2002 MBA (Master of Business Administration)
  University of North Carolina, Chapel Hill, NC
- 1997-2000 Postdoctoral researcher
  University of North Carolina, Chapel Hill, NC; Advisor: Prof. Thomas J. Meyer
- 1992-1997 Ph.D., Physical Chemistry
  Marquette University, Milwaukee, WI; Advisor: Prof. James R. Kincaid
- 1985-1990 M.S., Chemistry, Summa Cum Laude
  Comenius University, Bratislava, Slovakia; Advisor: Prof. Peter Schwendt

Honors/Awards:

- Director's fellowship, Los Alamos National Laboratory
- American Institute of Chemists Award
- Comenius University Chancellor's Award

Professional Activities:

- Chair/Organizer: "Probing Dynamic Processes in Soft Materials Using Advanced Light Sources", International workshop, July 25-27, 2016, Santa Fe, NM
- Symposium Chair/Organizer: "Nanomaterials for PV Applications", 234th ACS National Meeting, Boston, MA, August 19-23, 2007
- Member of LANL Energy Security Senior Strategy Team, 2009 – 2011

Publications:

1. Size-Dependent Electronic Properties of Strongly Confined Graphene Quantum Dots. Ji, Z.; Dervishi, E.; Doorn, S. K.; **Sykora, M.**[*] *J. Phys. Chem. Lett.* **2019**, *10*, 953–959.
2. Raman spectroscopy of bottom-up synthesized graphene quantum dots: size and structure dependence. Dervishi, E.; Ji, Z.; Htoon, H.; **Sykora, M.**[*]; Doorn, S. K.[*] *Nanoscale,* **2019**, *11*, 16571-16581.
3. Role of Interface Chemistry in Opening New Radiative Pathways in InP/CdSe Giant Quantum Dots with Blinking-Suppressed Two-Color Emission. Dennis, A. M.; Buck, M. R.; Wang, F.; Hartmann, N. F.; Majumder, S.; Casson, J. L.; Watt, J. D.; Doorn, S. K.; Htoon, H.; **Sykora, M.**; Hollingsworth, J. A[*]. *Adv. Funct. Mat.* **2019***, 29,*1809111.
4. High-Temperature Refractory Metasurfaces for Solar Thermophotovoltaic Energy Harvesting. Chang, C-C.; Kort-Kamp, W.; Nogan, J.; Luk, T. S.; Azad, A. K.; Taylor, A. J.; Dalvit, D.; **Sykora, M.**; Chen, H-T.[*] *Nano Lett.* **2018***, 18,*7665–7673.
5. Elucidating the Role of the Metal Linking Ion on the Excited State Dynamics of Self-Assembled Bilayers. Wang, J.; Ogunsolu, O.; **Sykora, M.;** Hanson, K.[*] *J. Phys. Chem. C* **2018***, 122,* 9835-9842.
6. Turning Off Blinking for Two Colors: Using Shape Control to Stabilize Multiexciton Emission in CdSe/CdS Tetrapods. Mishra, N.; Orfield, N. J.; Wang, G.; Hu, Z.; Krishnamurthy, S.; Malko, A. V.; Casson, J. L.; Htoon, H.; **Sykora, M.**[*]**;** Hollingsworth, J. A.[*] *Nature Comm.* **2017**, 8:15083, 1-9.

7. Intragranular Phase Proton Conduction in Crystalline $Sn_{1-x}In_xP_2O_7$ (x=0 and 0.1). Kreller, C; Pham, H.; Wilson, M.; Mukundan, R.; Henson, N.; **Sykora, M.**; Hartl, M.; Daemen, L.; Garzon, F.* *J. Phys. Chem. C*, **2017**, *121*, 23896−23905.
8. Giant PbSe CdSe CdSe Quantum Dots: Crystal-Structure-Limited Ultrastable Near-Infrared Photoluminescence from Single Nanocrystals. Hanson, C. J., Hartman, N. F.; Singh, A.; Ma, X.; DeBendetti, W. J. I.; Casson, J, L.; Grey, J. K.; Chabal, Y. J.; Malko, A. V.; **Sykora, M**.; Piryatinski, A.; Htoon, H.; Hollingsworth, J. A.* *J. Am. Chem. Soc*., **2017**, *139*, 11081–11088.
9. Elucidating the Energy and Electron Transfer Dynamics of Photon Upconversion in Self-Assembled Bilayers. Dilbeck, T.; Wang, J.; Zhou, Y.; Olsson, A.; **Sykora, M.;** Hanson, K.* *J. Phys. Chem. C*, **2017**, *121,* 19690−19698.
10. Metasurface Broadband Solar Absorber. Azad, A.K.; Kort-Kamp, W. J. M.; **Sykora, M.;** Weisse-Bernstein, N. R.; Luk, T. S.; Taylor, A. J.; Dalvit, D.; Chen, H-T. *Sci. Reports,* **2016**, *6:20347*, 1-6.
11. Thermal stability of a eutectic mixture of bis(2,2-dinitropropyl) acetal and formal: Part B. Degradation mechanisms under water and high humidity environments. Yang, D.; Pacheco, R.; Edwards, S.; Torres, J.; Henderson, K.; **Sykora, M.;** Stark, P.; Larson, S. *Polymer Degrad. Stability,* **2016**, *130*, 338–347.
12. Electrochromic Graphene Molecules. Ji, Z.; Doorn, S. K.; **Sykora, M.*** *ACS Nano*, **2015**, *9*, 4043–4049.
13. In-Situ Synthesis of Graphene Molecules on TiO_2: Application in Sensitized Solar Cells. Ji, Z.; Wu, R.; Adamska, L.; Velizhanin, K. A.; Doorn, S. K.; **Sykora, M.*** *ACS Appl. Mater. Interfaces*, **2014**, *6*, 20473–20478.
14. Layer-by-Layer Fabrication of Nanowire Sensitized Solar Cells: Geometry-Independent Integration. Acharya, K. P.; Ji, Z.; Holesinger, T. G.; Crisp, J. A.; Ivanov, S. A.; Williams, D. J.; Casson, J. L.; **Sykora, M.;*** Hollingsworth, J. A.* *Adv. Funct. Mater.* **2014**, *24*, 6843–6852.
15. Role of Solvent-Oxygen Ion Pairs in Photooxidation of CdSe Nanocrystal Quantum Dots. Manner, V.W.; Koposov A. Y.; Szymanski, P.; Klimov, V. I.; **Sykora, M.*** *ACS Nano.* **2012**, *6*, 2371-2377.
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18. Electronic Properties and Structure of Assemblies of CdSe Nanocrystal Quantum Dots and Ru-polypyridine Complexes Probed by Steady State and Time-Resolved Photoluminescence. Koposov, A. Y.; Szymanski, P.; Cardolaccia, T.; Meyer, T. J.; Klimov, V. I.; **Sykora, M.*** *Adv. Funct. Mat.* **2011***, 21,* 3159–3168.
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23. Effect of Air Exposure on Surface Properties, Electronic Structure and Carrier Relaxation in PbSe Nanocrystals. **M. Sykora***; A. Y. Koposov, J. A. McGuire, R. K. Schulze, O. Tretiak, J. M. Pietryga and V. I. Klimov.* *ACS Nano*, **2010**, *4*, 2021–2034.
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54. Resonance Raman Investigation of Cyanide Ligated Beef Liver and Aspergillus Niger Catalases. Al-Mustafa, J.; **Sykora, M**.; Kincaid, J. R.* *J. Biol. Chem*. **1995**, *270*, 10449.
55. Vibrational Spectra of Aquadioxotetraperoxovanadates(V) $M_2[V_2O_2(O_2)_4(H_2O)]xH_2O(M=N(CH_3)_4$, Cs). Schwendt, P.*; **Sykora, M**. *Collection of Czech. Chem. Commun*. **1990**, *55*, 1485.

Patents

1. Activation of molecular catalysts using semiconductor quantum dots. **M. Sykora**, V. I. Klimov, T. J. Meyer. US Patent 8,029,652.
2. Composite materials with metal oxide attached to lead chalcogenide nanocrystal quantum dots with linkers. N. Fuke, A. Y. Koposov, **M. Sykora**, L. Hoch. US Patent 8,911,887
3. Surface treatment of nanocrystal quantum dots after film deposition. **M. Sykora**, A. Y. Koposov, N. Fuke. US Patent 8,946,546.
4. Actinide oxide photodiode and nuclear battery. **M. Sykora**, I. Usov. US Patent 9,837,564.
5. Uranium Oxide Solar Cells. I. Usov, **M. Sykora.** US Patent pending