

Biographical Sketch- Viktor Chikan, PhD in experimental physical chemistry/material science

Brief summary of past research areas/experiences/interests: Colloidal synthesis of magnetic, semiconducting and metal nanomaterials, physical chemical and optical characterization of nanoparticles, magnetic hyperthermia, magnetic field induced drug release, magneto-liposomes, magneto optic effects in colloidal nanoparticles, chemical dynamics, terahertz spectroscopy, chemical dynamics, ultrafast spectroscopy, transient absorption spectroscopy

Professional Preparation:

- University of Szeged, Szeged, Hungary, Organic Chemistry, MSc, 1998
- Kansas State University, Manhattan, KS, Physical Chemistry, PhD 2002
- University of California and LBNL, Berkeley, CA, Chemical Dynamics, postdoc 2005

Appointments:

Group Leader, Extreme Light Infrastructure-Attosecond Light Pulse Source (ELI-ALPS), Hungary 2016-Present

Associate Professor in chemistry

Kansas State University 2011-Present

Sabbatical in Hungary: Visiting Professor

Department of Optics and Quantum Electronics/University of Szeged/Hungary (with prof. Karoly Osvay) 2014

Assistant Professor in chemistry

Kansas State University 2005-2011

Postdoctoral Researcher (advisor: Stephen R. Leone)

University of California and LBNL, Berkeley, CA 2003-2005

Graduate Research Assistant (advisor: David F. Kelley)

Kansas State University 1999-2002

Analytical Chemist

Bend Research Inc., Bend, OR 1999

Experience and Brief Summary of Accomplishments:

Group Leader of ULTRAFAST DYNAMICS AND REACTION CONTROL GROUP at ELI-ALPS (ongoing): Hired team members for the group, managed day to day activities of the group members, the lab and the group, developed conceptual plans for building transient absorption spectrometer and implemented the design and construction, constructed an ultrafast laser laboratory to study the impact of terahertz on physical and chemical process, developed/implemented FT-VIS to study XUV photofragmentation of small molecules, studied terahertz generation from 2 color laser induced air plasmas

Assistant Professor and Associate Professor at KSU(ongoing): Built research program in the field of nano- and biotechnology; Managed laboratory, Trained students/PhDs/postdocs, Developed several new graduate and undergraduate courses; Established collaborations with academia and industry; Obtained funding from various agencies (NSF, NIH, ACS); Built various spectroscopic equipment; Built and developed electromagnets; Developed programs in Matlab/Labview, Developed several new nanomaterials (doped CdSe, iron silicide, gold-iron alloy nanoparticles); Studied efficiencies of solar cell components by single molecule microscopy, Developed magneto liposomes drug delivery system, Developed magnetic hyperthermia treatment for cancer; Formal and Informal Oral Presentations at international/national conferences/universities/high school/middle school level, Served in various university committees and as the president of the local ACS (7 years); published 30 papers/books chapters, write over 70 proposals, Directly responsible for raising 2 million dollars and raised over 20 million dollars collaboratively for research

Postdoctoral Work with Prof. Stephen Leone (UC, Berkeley): Performed Time-resolved FTIR/VIS emission studies of combustion dynamics by excimer lasers; Developed of high-resolution Fourier Transform Visible Spectroscopic methodology to study combustion processes; Worked with femtosecond lasers and synchrotron source at the Advanced Light Source, published 7 papers

Graduate Work(KSU with Prof. David F. Kelley-currently at UC, Merced): PhD Dissertation title: Layered semiconductor nanoparticles Developed the synthesis of GaSe and MoS₂ quantum dots; Investigated the carrier dynamics in nanostructures by ultrafast laser spectroscopy; gained hands on experience with several Ti:Sapphire femtosecond and picosecond laser systems, including regenerative amplifiers and optical parametric amplifiers; Designed and built instrumentation for optical measurements and interfaced analog instruments to computers, Served as Vice President of Alpha Epsilon chapter of Phi Lambda Upsilon, Received several classroom and research awards, published 7 papers

Analytical Chemist (Bend Research Inc.): Developed automated GC to analyze solvent and gas; built membrane testing equipment to characterize the permeability of separation membranes; studied drug release capability of biopolymers

Undergraduate work (University of Szeged): Master thesis title: Atmospheric synthesis of MIBK over MgO supported Cu catalysts Developed industrial catalysts to produce MIBK, characterized catalysts by various analytical techniques including thermal analysis, published 1 paper

Technical Skills:

Programming skills: Matlab, Labview, C, C++, Pascal, Basic, Fortran

Instrumentation (expert level): Transient absorption spectroscopy, ultrafast pulse characterization(auto correlator, FROG), time correlated single photon counting spectroscopy, Measurement of steady-state and particularly time-resolved fluorescence anisotropy, time-domain terahertz spectroscopy, time-resolved FTIR/FTVIS emission and absorption spectroscopy, Gas chromatography/mass spectrometry, optical rotation(Faraday) measurements, in situ spectroscopic measurement tools, TEM/HRTEM, electron diffraction, magnetic AC susceptibility measurement, high vacuum systems, pulsed electromagnets (rotating and underdamped), induction heating electromagnets,

Hands on experience with coherent and incoherent light sources: ultrafast light sources (Ti:sapphire regenerative amplified or cavity dumped laser systems), CEP stabilized pulses, Generation of terahertz radiation from 2 color laser induced plasma, Generation of terahertz radiation from optical rectification, Generation of terahertz radiation from GaP and ZnTe, Generation of high-power terahertz pulses by tilted-pulse-front excitation, Synchrotron radiation (5-20 eV), nanosecond flash lights, excimer laser, YAG laser, diode lasers (built own fiber coupler)

Analytical tools (user level): Single molecule spectroscopy, Raman spectroscopy, XRD, SAXS, NMR, SQUID, EDX, XPS, time of flight mass spectrometry, Thermal Analysis (DTG, DTA) Dynamic Light Scattering (DLS), Atomic Absorption Spectroscopy

Electronics: picosecond timing electronics, National Instrument and other DAQ boards and cards, nanosecond transient cards, piezo valves, lock in amplifiers, voltage and current amplifiers, timing electronics, Arduino controllers, digital (I2C and SPI) and analog sensors, motion control (stepper motor and servo controllers), optical delay lines (mechanical and piezo), temperature controllers, mass flow controllers, microwave generators

Detectors: avalanche diodes, silicon detectors, CCDs, balanced deflection systems, cooled IR detectors, XUV detectors, MCP, ultrasound detection with hydrophones, integrating spheres, fiber optic spectrometers

Colloidal Nanoparticle Synthesis: magnetic, semiconductor, and insulator materials, gold coating of magnetic nanoparticles (hot injection method, single precursor synthesis, induction heating synthesis, room temperature precipitation)

Awards Received:

Faculty Development Award (2009), Phi Lambda Upsilon Graduate Research Award (2002), International Graduate Student Award (2002), Phi Lambda Upsilon Graduate Classroom Achievement Award (2001), Chemistry Merit Fellowship at KSU (1999 and 2000), Hungarian Chemical Society Award (1998)

Teaching:

Graduate and Undergraduate Classes Taught at Kansas State University:

Advances in Nanotechnology (CHM 955) - Fall of 2005, 2006, 2007
Chemistry II (CHM 230) - Summers of 2007, 2011, 2013, 2015
Chemical Kinetics (CHM 955)-Spring of 2010, 2013, 2015, 2018
Introduction to Nanophotonics (CHM 955)-Spring of 2011, Fall of 2013, 2014, 2017
Physical Chemistry I(Thermodynamics/Chemical Kinetics) (CHM 585) – Falls of 2008, 2009, 2010, 2011, 2012, 2016
Physical Chemistry II (CHM 595) (Quantum mechanics, Spectroscopy, Statistical thermodynamics) - Springs of 2007, 2008, 2012, 2014, 2015, 2016, 2017, 2018
Physical Methods Lab (CHM 596) - Spring of 2006
Material Science course (CHM 820) - Spring of 2006
General Chemistry (CHM 110)-Summers of 2008, 2009

Novel teaching approaches: Introducing Matlab Programming into a graduate level Chemical Kinetics and Nanophotonics Course, Implementing i-Clicker for various courses for interactive learning

Professional Memberships and Affiliations:

American Chemical Society, Hungarian Chemical Society, Phi Lambda Upsilon Honorary Chemical Society, Alpha Chi Sigma chemistry fraternity, Johnson Center for Basic Cancer Research, Midwest Institute for Comparative Stem Cell Biology

Recent Services:

Magnetochemistry editorial board, Chair of ACS local chapter (2005-2014); ACS Alternate Councilor (2013-2016), ACS Councilor (2017-Present), Member of Graduate Recruiting Committee (2005-2014); Member of Faculty Search Committee for theoretical chemistry position; Recruiting talks at regional colleges; Doctoral and Masters Committees (KSU 54 total, 1 University of Szeged, 2 IIT Roorkee); Organizing Physical Chemistry Seminar; Reviewer duties for several domestic(DOE, NSF, ACS, Maryland Industrial Partnerships Program)) and international funding agencies (L'Agence Nationale de la Recherche (ANR), Czech Academy of Sciences, Estonian Research Council) and journals, Campus Laser Safety Committee, Faculty advisor for Alpha Chi Sigma

Collaborators: Stefan Bossmann (KSU); Daniel Higgins (KSU); Jacek Jasinski (University of Louisville); Paul Smith (KSU), Deryl Troyer (KSU); Robert W. Meulenberg (University of Maine), Gary Wysin (KSU, physics), NanoScale Corporation, Dr. Takeo Iwamoto (KSU), Prof. Prashant V. Kamat (Notre Dame), Christopher Elles (KU), Senqiang Ren (KU), Karoly Osvay (ELI-ALPS/University of Szeged), Adam Borzsonyi (ELI-ALPS), Jozsef Fulop (ELI-ALPS/University of Pecs), Ryan Rafferty(KSU), Emily McLaurin (KSU), Imre Szilagyi

(Budapest University of Technology and Economics), Bin Liu (KSU), Peter Pfromm (Washington State University), Punit Prakash (KSU)

Graduate Advisors and Postdoctoral Sponsors:

MSc - Prof. Arpad Molnar (University of Szeged, Hungary)

PhD - Prof. David F. Kelley (UC, Merced)

Postdoc - Prof. Stephen R. Leone (UC, Berkeley)

Current and Former Graduate Students:

Dr. Pinard Dagtepe (Boston Turkish Embassy), Dr. Naween Dahal (Environmental Health And Safety specialist University of Texas, Austin), Dr. Christopher Tuinenga (Adjunct Professor at Elmhurst College), Dr. Raj Kumar Dani (Senior Lecturer, Trinity International College, Dillibazar, Kathmandu, Nepal), Dr. Santanu Roy (Assistant Professor Dimapur, St John College, Nagaland, India), Dr. Hongfu Luo (Toronto/Canada currently seeking employment), Dr. George Podaru (Works at Nitech is one of the top Romanian suppliers of high-end technology instruments for general laboratory, diagnostic and research purposes.), Krisztina Sarosi (currently PhD student at ELI-ALPS), Basanta Acharya (currently PhD student at KSU), Pratikshya Sharma (currently PhD student at KSU), Laszlo Bodnar (currently PhD student at KSU), Roland Flender (University of Szeged/ELI-ALPS co-adviser with Adam Borzsonyi), Mohammad Sadegh Yazdanparast (finished 2018), Omid Shafiee

Current and Former Undergraduate Students:

Fadzai Fungura (Process Engineer at Intel Corporation), Curt Hamphill (Senior Process Engineer at Burns & McDonnell), Brett Vaughn (Professional Research Assistant at University of Colorado Denver), Christopher Lewis (Laboratory Technologist II at Halliburton), Alicia Aguirre (PhD student Iowa State University), Saralyn Ogden (Software Engineer, Seattle area), Nathan Young (Kaplan GRE teacher and former engineer at Graphene Frontiers), Dr. Lorinc Sarkany (finished PhD University of Tübingen interviewing in Japan for postdoc), Alec Todd (not known), Amanda Baxter (Ph.D. Candidate at University of Southern California), Joshua Shipman (PhD student University of Kansas), Emery Brown (graduated from KSU), Dr. John Moore (postdoc, University of Barcelona), Chris Ramirez (Test Engineer, Washington DC), Matthew Taw (Technical Lab Coordinator Louisville, Kentucky Area), Krisztina Sarosi (University of Szeged), Daniel Tye (KSU), Karan Mehra (RF Design Engineer at ViaSat Phoenix, Arizona Area), Zachary Sliefert (Software Engineer at Decision Resources Group Kansas City, Missouri Area), Noah Hollinger (KSU), Nathan Flesher (KSU), Erwin Petracs (University of Szeged), Mathew Davis (KSU)

Current and Formal Postdoctoral trainees:

Dr. Pankaj Kanti Mandal (Associate Professor IISER Pune, India <http://www.iiserpune.ac.in/~pankaj/>), Dr. Karoly Mogyorosi (senior research fellow at ELI-ALPS)

Publications:

1. Flender, R.; Sarosi, K.; Petracs, E.; Borzsonyi, A.; Chikan, V., Control of THz field waveform emitted from air plasma by chirping two-color laser pulses. *Optics Communications* **2019**, *436*, 222-226.
2. Shan, N.; Chikan, V.; Pfromm, P.; Liu, B., Fe and Ni Dopants Facilitating Ammonia Synthesis on Mn₄N and Mechanistic Insights from First-Principles Methods. *Journal of Physical Chemistry C* **2018**, *122* (11), 6109-6116.
3. Luo, H.; Kebede, B. A.; McLaurin, E. J.; Chikan, V., Rapid Induction and Microwave Heat-Up Syntheses of CdSe Quantum Dots. *ACS Omega* **2018**, *3* (5), 5399-5405.
4. Hulangamuwa, C. W.; Acharya, B.; Rafferty, R.; Chikan, V. Enhancing drug delivery to cancer cells: The effect of combining inhomogeneous magnetic fields with magnetic nanoparticles. submitted provisional patent application, 2018.

5. Flender, R.; Sárosi, K.; Petrács, E.; Borzsonyi, A.; Chikán, V. In *Controlling terahertz spectrum in asymmetric air plasmas: the role of GDD and phase*, SPIE Photonics Europe, SPIE: 2018; p 10.
6. Podaru, G.; V, C., Magnetism in Nanomaterials: Heat and Force from Colloidal Magnetic Particles. In *Magnetic Nanomaterials*, Bossmann, S. H.; Wang, H., Eds. The Royal Society of Chemistry: 2017.
7. Flender, R.; Sárosi, K.; Borzsonyi, A.; Chikan, V. In *The impact of dispersion of the ultrashort light pulses on the THz radiation formation from asymmetric air plasmas*, SPIE Optics + Optoelectronics, SPIE: 2017; p 7.
8. Dimitris Charalambidis, V. C., Eric Cormier, Péter Dombi, József András Fülöp, Csaba Janáky, Subhendu Kahaly, Mikhail Kalashnikov, Christos Kamperidis, Sergei Kühn, Franck Lepine, Anne L'Huillier, Rodrigo Lopez-Martens, Sudipta Mondal, Károly Osvay, Óvári László, Piotr Rudawski, Giuseppe Sansone, Paris Tzallas, Zoltán Várallyay, and Katalin Varjú, *Progress in Ultrafast Intense Laser Science XIII*. 2017.
9. Podaru, G. V.; Chikan, V.; Prakash, P., Magnetic Field Induced Ultrasound from Colloidal Superparamagnetic Nanoparticles. *The Journal of Physical Chemistry C* **2016**, *120* (4), 2386-2391.
10. Lu, R.; Liu, J.; Luo, H.; Chikan, V.; Wu, J. Z., Graphene/GaSe-Nanosheet Hybrid: Towards High Gain and Fast Photoresponse. *Scientific Reports* **2016**, *6*, 19161.
11. Chikan, V.; McLaurin, E., Rapid Nanoparticle Synthesis by Magnetic and Microwave Heating. *Nanomaterials* **2016**, *6* (5), 85.
12. Yang, Q.; Gong, M.; Cai, S.; Zhang, T.; Douglas, J. T.; Chikan, V.; Davies, N. M.; Lee, P.; Choi, I.-Y.; Ren, S.; Forrest, M. L., Combining hard and soft magnetism into a single core-shell nanoparticle to achieve both hyperthermia and image contrast. *Therapeutic Delivery* **2015**, *6* (10), 1195-210.
13. Wang, H.; Shrestha, T. B.; Basel, M. T.; Pyle, M.; Toledo, Y.; Konecny, A.; Thapa, P.; Ikenberry, M.; Hohn, K. L.; Chikan, V.; Troyer, D. L.; Bossmann, S. H., Hexagonal magnetite nanoprisms: preparation, characterization and cellular uptake. *J Mater Chem B* **2015**, *3* (23), 4647-4653.
14. Scott, R.; Kirkeminde, A.; Gong, M.; Totleben, J.; Ren, S.; Tuinenga, C.; Lewis, C.; Luo, H.; Higgins, D.; Chikan, V., (Invited) Impact of Indium and Gallium Doping on the Photovoltaic Performance of CdSe Quantum Dot Hybrid Solar Cells. *ECS Transactions* **2015**, *66* (15), 1-8.
15. Podaru, G.; Moore, J.; Dani, R. K.; Prakash, P.; Chikan, V., Nested Helmholtz coil design for producing homogeneous transient rotating magnetic fields. *Review of Scientific Instruments* **2015**, *86* (3).
16. Luo, H.; Tuinenga, C.; Guidez, E. B.; Lewis, C.; Shipman, J.; Roy, S.; Aikens, C. M.; Chikan, V., Synthesis and Characterization of Gallium-Doped CdSe Quantum Dots. *Journal of Physical Chemistry C* **2015**, *119* (19), 10749-10757.
17. Podaru, G.; Ogden, S.; Baxter, A.; Shrestha, T.; Ren, S.; Thapa, P.; Dani, R. K.; Wang, H.; Basel, M. T.; Prakash, P.; Bossmann, S. H.; Chikan, V., Pulsed Magnetic Field Induced Fast Drug Release from Magneto Liposomes via Ultrasound Generation. *The Journal of Physical Chemistry B* **2014**, *118* (40), 11715-11722.
18. Wysin, G. M.; Chikan, V.; Young, N.; Dani, R. K., Effects of interband transitions on Faraday rotation in metallic nanoparticles. *J Phys-Condens Mat* **2013**, *25* (32).
19. Sarkany, L.; Wasylenko, J. M.; Roy, S.; Higgins, D. A.; Elles, C. G.; Chikan, V., Investigation of Fluorescence Emission from CdSe Nanorods in PMMA and P3HT/PMMA Films. *Journal of Physical Chemistry C* **2013**, *117* (37), 18818-18828.
20. Bossmann, S.; Chikan, V.; Dani, R. K., Magnetic Nanoparticles for Biosensing and Cancer Treatment
Biosensing and Cancer Treatment with Magnetic Nanoparticles. In *Biosensors Based on Nanomaterials and Nanodevices*, Li, J.; Wu, N., Eds. CRC Press: 2013.
21. Wang, H.; Shrestha, T. B.; Basel, M. T.; Dani, R. K.; Seo, G.-M.; Balivada, S.; Pyle, M. M.; Prock, H.; Koper, O. B.; Thapa, P. S.; Moore, D.; Li, P.; Chikan, V.; Troyer, D. L.; Bossmann, S. H., Magnetic-Fe/Fe₃O₄-nanoparticle-bound SN38 as carboxylesterase-cleavable

- prodrug for the delivery to tumors within monocytes/macrophages. *Beilstein Journal of Nanotechnology* **2012**, *3*, 444-455.
22. Roy, S.; Aguirre, A.; Higgins, D. A.; Chikan, V., Investigation of Charge Transfer Interactions in CdSe Nanorod P3HT/PMMA Blends by Optical Microscopy. *Journal of Physical Chemistry C* **2012**, *116* (4), 3153-3160.
23. Kalita, M.; Cingarapu, S.; Roy, S.; Park, S. C.; Higgins, D.; Jankowiak, R.; Chikan, V.; Klabunde, K. J.; Bossmann, S. H., Direct Synthesis of Aqueous Quantum Dots through 4,4'-Bipyridine-Based Twin Ligand Strategy. *Inorganic Chemistry* **2012**, *51* (8), 4521-4526.
24. Dahal, N.; Chikan, V., Synthesis of Hafnium Oxide-Gold Core-Shell Nanoparticles. *Inorganic Chemistry* **2012**, *51* (1), 518-522.
25. Basel, M. T.; Balivada, S.; Wang, H.; Shrestha, T. B.; Seo, G. M.; Pyle, M.; Abayaweera, G.; Dani, R.; Koper, O. B.; Tamura, M.; Chikan, V.; Bossmann, S. H.; Troyer, D. L., Cell-delivered magnetic nanoparticles caused hyperthermia-mediated increased survival in a murine pancreatic cancer model. *International Journal of Nanomedicine* **2012**, *7*, 297-306.
26. Dani, R. K.; Wang, H.; Bossmann, S. H.; Wysin, G.; Chikan, V., Faraday rotation enhancement of gold coated Fe(2)O(3) nanoparticles: Comparison of experiment and theory. *Journal of Chemical Physics* **2011**, *135* (22).
27. Chikan, V., Challenges and Prospects of Electronic Doping of Colloidal Quantum Dots: Case Study of CdSe. *Journal of Physical Chemistry Letters* **2011**, *2* (21), 2783-2789.
28. Rachakatla, R. S.; Balivada, S.; Seo, G. M.; Myers, C. B.; Wang, H. W.; Samarakoon, T. N.; Dani, R.; Pyle, M.; Kroh, F. O.; Walker, B.; Leaym, X. X.; Koper, O. B.; Chikan, V.; Bossmann, S. H.; Tamura, M.; Troyer, D. L., Attenuation of Mouse Melanoma by A/C Magnetic Field after Delivery of Bi-Magnetic Nanoparticles by Neural Progenitor Cells. *Acs Nano* **2010**, *4* (12), 7093-7104.
29. Dahal, N.; Wright, J. T.; Willey, T. M.; Meulenberg, R. W.; Chikan, V., Preparation of Iron and Gold Silicide Nanodomains on Silicon (111) by the Reaction of Gold, Iron-Gold-Core Shell, and Alloy Nanoparticles with Triethylsilane. *Acs Applied Materials & Interfaces* **2010**, *2* (8), 2238-2247.
30. Dahal, N.; Chikan, V., Phase-Controlled Synthesis of Iron Silicide (Fe₃Si and FeSi₂) Nanoparticles in Solution. *Chemistry of Materials* **2010**, *22* (9), 2892-2897.
31. Dagtepe, P.; Chikan, V., Quantized Ostwald Ripening of Colloidal Nanoparticles. *Journal of Physical Chemistry C* **2010**, *114* (39), 16263-16269.
32. Balivada, S.; Rachakatla, R. S.; Wang, H.; Samarakoon, T.; Dani, R. K.; Pyle, M.; Kroh, F.; Walker, B.; Leaym, X.; Koper, O.; Tamura, M.; Chikan, V.; Bossmann, S.; Troyer, D., A/C magnetic hyperthermia of melanoma mediated by iron(0)/iron oxide core/shell magnetic nanoparticles: a mouse study. *BMC Cancer* **2010**, *10* (1), 119.
33. Roy, S.; Tuinenga, C.; Fungura, F.; Dagtepe, P.; Chikan, V.; Jasinski, J., Progress toward Producing n-Type CdSe Quantum Dots: Tin and Indium Doped CdSe Quantum Dots. *Journal of Physical Chemistry C* **2009**, *113* (30), 13008-13015.
34. Bossmann, S.; Troyer, D.; Chikan, V., Provisional Patent Application; MRI and Optical Assays for Proteases. **2009**, *Dkt. No. 40884-PRO*.
35. Basel, M. T.; Dani, R. K.; Kang, M.; Pavlenok, M.; Chikan, V.; Smith, P. E.; Niederweis, M.; Bossmann, S. H., Direct Observation of Gold Nanoparticle Assemblies with the Porin MspA on Mica. *Acs Nano* **2009**, *3* (2), 462-466.
36. Tuinenga, C.; Jasinski, J.; Iwamoto, T.; Chikan, V., In situ observation of heterogeneous growth of CdSe quantum dots: Effect of indium doping on the growth kinetics. *Acs Nano* **2008**, *2* (7), 1411-1421.
37. Dani, R. K.; Kang, M.; Kalita, M.; Smith, P. E.; Bossmann, S. H.; Chikan, V., MspA porin-gold nanoparticle assemblies: Enhanced binding through a controlled cysteine mutation. *Nano Lett.* **2008**, *8* (4), 1229-1236.
38. Dahal, N.; Chikan, V.; Jasinski, J.; Leppert, V. J., Synthesis of Water-Soluble Iron-Gold Alloy Nanoparticles. *Chemistry of Materials* **2008**, *20* (20), 6389-6395.
39. Mandal, P. K.; Chikan, V., Plasmon-phonon coupling in charged n-type CdSe quantum dots: A THz time-domain spectroscopic study. *Nano Lett.* **2007**, *7* (8), 2521-2528.

40. Howle, C. R.; Arrowsmith, A. N.; Chikan, V.; Leone, S. R., State-resolved dynamics of the CN(B-2 Sigma(+)) and CH(A(2)Delta) excited products resulting from the VUV photodissociation of CH₃CN. *J Phys Chem A* **2007**, *111* (29), 6637-6648.
41. Dagtepe, P.; Chikan, V.; Jasinski, J.; Leppert, V. J., Quantized growth of CdTe quantum dots; Observation of magic-sized CdTe quantum dots. *Journal of Physical Chemistry C* **2007**, *111* (41), 14977-14983.
42. Chikan, V.; Fournier, F.; Leone, S. R.; Nizamov, B., State-resolved dynamics of the CH(A(2)Delta) channels from single and multiple photon dissociation of bromoform in the 10-20 eV energy range. *J Phys Chem A* **2006**, *110* (9), 2850-2857.
43. Arrowsmith, A. N.; Chikan, V.; Leone, S. R., Dynamics of the CH(A(2)Delta) product from the reaction of C₂H with O-2 studied by Fourier transform visible Spectroscopy. *J Phys Chem A* **2006**, *110* (24), 7521-7526.
44. McDonough, L. A.; Chikan, V.; Kim, Z. H.; Leone, S. R.; Hinsberg, W. D., Fourier transform infrared spectroscopy studies of water-polymer interactions in chemically amplified photoresists. *J Vac Sci Technol B* **2005**, *23* (2), 344-348.
45. Chikan, V.; Leone, S. R., Vibrational distributions of the CO(v) products of the C₂H₂+O(P-3) and HCCO+O(P-3) reactions studied by FTIR emission. *J Phys Chem A* **2005**, *109* (11), 2525-2533.
46. Chikan, V.; Leone, S. R., Vibrational and rotational distributions of the CH(A(2)Delta) product of the C₂H+O(P-3) reaction studied by Fourier transform visible (FTVIS) emission spectroscopy. *J Phys Chem A* **2005**, *109* (47), 10646-10653.
47. Tu, H.; Yang, S.; Chikan, V.; Kelley, D. F., Spectroscopy of GaSe nanoparticle aggregates. *J Phys Chem B* **2004**, *108* (15), 4701-4710.
48. Chikan, V.; Nizamov, B.; Leone, S. R., Product state distributions of vibrationally excited CO(v) for the CH((XII)-I-2) and CH(A(2)Delta) channels of the C₂H+O(P-3) reaction. *J Phys Chem A* **2004**, *108* (49), 10770-10782.
49. Tu, H.; Chikan, V.; Kelley, D. F., Electron and hole intraband spectroscopy of GaSe nanoparticles. *J Phys Chem B* **2003**, *107* (38), 10389-10397.
50. Chikan, V.; Kelley, D. F. In *Spectroscopy, dynamics, and electron transfer in GaSe nanoparticles*, Proc. SPIE Physical Chemistry of Interfaces and Nanomaterials, 2002; pp 36-50.
51. Chikan, V.; Kelley, D. F., Synthesis of highly luminescent GaSe nanoparticles. *Nano Lett.* **2002**, *2* (2), 141-145.
52. Chikan, V.; Kelley, D. F., Size-dependent spectroscopy of MoS₂ nanoclusters. *J Phys Chem B* **2002**, *106* (15), 3794-3804.
53. Chikan, V.; Kelley, D. F., Carrier relaxation dynamics in GaSe nanoparticles. *Nano Lett.* **2002**, *2* (9), 1015-1020.
54. Chikan, V.; Kelley, D. F., Relaxation dynamics in photoexcited GaSe nanoparticles. *Journal of Chemical Physics* **2002**, *117* (19), 8944-8952.
55. Chikan, V.; Waterland, M. R.; Huang, J. M.; Kelley, D. F., Relaxation and electron transfer dynamics in bare and DTDCI sensitized MoS₂ nanoclusters. *Journal of Chemical Physics* **2000**, *113* (13), 5448-5456.
56. Chikan, V.; Molnar, A.; Balazsik, K., One-step synthesis of methyl isobutyl ketone from acetone and hydrogen over Cu-on-MgO catalysts. *J. Catal.* **1999**, *184* (1), 134-143.

Oral Presentations:

1. Manipulating Nanoparticles/Molecules with Intense Electric and Magnetic Fields, Hebrew University at Jerusalem, Israel, November 11th, 2018
2. Manipulating Nanoparticles/Molecules with Intense Electric and Magnetic Fields, Tel Aviv University, Israel, November 8th, 2018
3. Building a Better Nanoparticle, Fraunhofer-Institut für Silicatforschung ISC, Wurtzburg, Germany, November 14th, 2017
4. (Magnetic) Nanoparticles in intense Electric and Magnetic Fields, Foundation for Research and Technology – Hellas, Crete, Greece, October 26th, 2017

5. Exploring the impact of intense THz electric fields on molecular and electronic processes at the Extreme Light Infrastructure, Department of Chemistry, Kansas State University, August 31st, 2017
6. Scientific Advisory Committee 9th Meeting: Terahertz Reaction Control Group, ELI-ALPS, Szeged, 13-14th July, 2017, ELI-ALPS, Szeged
7. 23rd Scientific Management Meeting: Terahertz Reaction Control Group, 10-11th July, 2017, ELI-ALPS, Szeged
8. 3rd ELIP-ALPS Science Day, Terahertz Reaction Control Group, ELI-ALPS, July 12th, 2017
9. 23rd Scientific Management Meeting: First Terahertz Experiments, 10-11th July, 2017, ELI-ALPS, Szeged
10. Exploring the Impact of Large THz Electric Fields on Molecular and Electronic Processes in Gas and Solid Phase – Terahertz Reaction Control Group at Extreme Light Infrastructure, Chemical Dynamics Beamline seminar at Advanced Light Source, Lawrence Berkeley Laboratory, April 3rd, 2017
11. Induction and microwave heating in syntheses of CdSe quantum dots: Effects of extreme high heating rate on their nucleation and growth kinetics, ACS 253rd National Meeting in San Francisco, April 2nd, 2017
12. Exploring the Impact of Large THz Electric Fields on Molecular and Electronic Processes in Gas and Solid Phase – Terahertz Reaction Control Group at Extreme Light Infrastructure, Atomic, Molecular, and Optical Physics (AMO) Seminar at JR. Macdonald Laboratory at KSU, January 18, 2017
13. Terahertz Beamlines & Applications, 4th ELI-ALPS User Workshop, Szeged, Hungary, 10–11 November 2016, Jozsef Fulop
14. Computer simulation of magnetic nanoparticles using 4th order Runge Kutta for magnetic heating and ultrasound production. K. Mehra, Z. Sliefert, V. Chikan, 2016 October 26-28, ACS Midwest Meeting
15. Induction and microwave heating in syntheses of CdSe quantum dots: Effects of extreme high heating rate on their nucleation and growth kinetics. H. Luo, B. Kebede, E.J. McLaurin, V. Chikan, 2016 October 26-28 ACS Midwest Meeting
16. Aszimmetrikus levegőplazmában keltett terahertzes rövidimpulzusok vizsgálata, Magyar Fizikus Vándorgyűlés 2016, Sárosi Krisztina , Flender Roland , Börzsönyi Ádám , Chikán Viktor
17. The impact of dispersion of the ultrashort light pulses on the THz radiation formation from asymmetric air plasmas, Attosecond Light Pulse Source (ELI-ALPS) fourth User Workshop on November 10-11, 2016, in Szeged, Hungary, Roland Flender , Krisztina Sárosi , Ádám Börzsönyi , Viktor Chikán
18. Building a Better Nanoparticle: Part I Doping Colloidal Quantum Dots Part II: Pulsed magnetic field induced fast drug release from magneto liposomes via ultrasound generation, Extreme Light Infrastructure, Budapest, WIGNER FK SZFI SZEMINARIUM, November 3rd, 2015
19. 250th American Chemical Society National Meeting & Exposition, Boston, Synthesis and characterization of gallium doped CdSe quantum dots (final paper number: PHYS 413), 2015 August 19th
20. 250th American Chemical Society National Meeting & Exposition, Boston, Pulsed magnetic field induced fast drug release from magneto liposomes via ultrasound generation (final paper number: COLL 454), 2015 August 19th
21. Building a Better Nanoparticle: Part I Doping Colloidal Quantum Dots Part II: Pulsed magnetic field induced fast drug release from magneto liposomes via ultrasound generation, Extreme Light Infrastructure, Szeged, December 5th, 2014
22. Building a Better Nanoparticle: Part I Doping Colloidal Quantum Dots Part II: Pulsed magnetic field induced fast drug release from magneto liposomes via ultrasound generation, "Ecole d'ingénieur", "Ecole Supérieure de Physique et de Chimie Industrielles", ESPCI, Paris, November 24th, 2014

23. American Higher Education, University of Szeged, Szeged, Hungary, November 13th 2014
24. Building a Better Nanoparticle: Part I Doping Colloidal Quantum Dots Part II: Pulsed magnetic field induced fast drug release from magneto liposomes via ultrasound generation, University of Szeged, Szeged, Hungary, November 6th 2014
25. Building a Better Nanoparticle: Part I Doping Colloidal Quantum Dots Part II: Pulsed magnetic field induced fast drug release from magneto liposomes via ultrasound generation, University of Gdańsk, Gdansk, Poland, October 16th 2014
26. Building a Better Nanoparticle: Part I Doping Colloidal Quantum Dots Part II: Pulsed magnetic field induced fast drug release from magneto liposomes via ultrasound generation, Jagiellonian University, Krakow, Poland, October 10th 2014
27. Building a Better Nanoparticle: Part I Doping Colloidal Quantum Dots Part II: Pulsed magnetic field induced fast drug release from magneto liposomes via ultrasound generation, University of Pecs, Pecs, Hungary, September 25th 2014
28. Building a Better Nanoparticle: Part I Doping Colloidal Quantum Dots Part II: Pulsed magnetic field induced fast drug release from magneto liposomes via ultrasound generation, Koc University, Istanbul, Turkey, September 11th 2014
29. Investigation of Fluorescence Emission from CdSe Nanorods in PMMA and P3HT/PMMA Films, 57th Midwest Solid State Conference, Lawrence, KS, September 28th, 2013
30. Building a Better Nanoparticle, Truman State University, Kirksville, September 13th, 2013
31. Indium, tin, and gallium doped CdSe quantum dots for use in hybrid photovoltaic devices, 245th ACS National Meeting & Exposition, New Orleans, April 7th, 2013
32. Challenges of controlling defects and composition of semiconductor quantum dots, 245th ACS National Meeting & Exposition, Industrial and Engineering Chemistry Fellow: Symposium in Honor of Larry Erickson, New Orleans, April 8th, 2013
33. Building a Better Nanoparticle, University of North Carolina, Chapel Hill, February 14th, 2013
34. Fluorescence blinking of single CdSe Nanorods in P3HT/PMMA film, 16th International Conference on Solid Films and Surfaces, Genoa, Italy, July 1st-July 6th, 2012
35. Fluorescence blinking of single CdSe Nanorods in P3HT/PMMA film, 3rd Annual Program Review NSF EPSCoR Kansas Center for Solar Energy Research, Wichita, Kansas, June 10-12, 2012
36. Sustainable materials for solar energy conversion, 6th Annual Chemistry & Physics High School Symposium Kansas State University, April, 12th, 2012
37. 1st Chemistry and Physics Symposium at Kansas State University for Middle school students interested in renewable energy, 2011 October 6th
38. 243th ACS National Meeting, Denver, Fluorescence intermittency of CdSe nanorods in PMMA/P3HT polymer blend, 2011 August 29th-September 1st
39. EuroNanoForum, Budapest, Doping Semiconductor Quantum Dots, 2011 May 30th –June 1st
40. 56th ACS Pentasectional Meeting, Bartlesville, OK, Magnetic Hyperthermia: Integrating Nanotechnology with Biology for Cancer Therapy and Doping Semiconductor Quantum Dots, 2011 March 12th
41. University of Ohio, Athens, Doping Semiconductor Quantum Dots, 2011 March 11th
42. Pittsburg State University, Doping Semiconductor Quantum Dots, 2011 February 11th
43. Hyperthermia: Integrating Nanotechnology with Biology for Cancer Therapy, Integrating Nanotechnology with Cell Biology and Neuroscience Symposia), The University of New Mexico, 2010 August 16-17th
44. Doping Semiconductor Quantum Dots, Universidad Internacional De Verano 2010, V Encuentro Internacional De Nanotecnologia, Lagos de Moreno (Mexico), 2010 July 26th-28th
45. UC Berkeley, Improving nanoparticles to meet today's challenges, 2010 March 23rd
46. Wichita State University, Doping Semiconductor Quantum Dots, 2010 February 17th

47. KSU Physical Chemistry Seminar, Doping Semiconductor Quantum Dots, 2010 February 16th
48. KSU Condense Matter Seminar, Doping Semiconductor Quantum Dots, 2009 December 4th
49. KSU Physical Chemistry Seminar, Drill Baby Drill!, 2009 September 22nd
50. INTERNATIONAL WORKSHOP ON MATERIALS AND DEVICES FOR SOLAR ENERGY CONVERSION,-Wichita State University (2009), Doping Semiconductor Quantum Dots, 2009 May 22-23
51. Rowland Institute at Harvard, Doping Semiconductor Quantum Dots, July 17th 2009
52. Colorado School of Mines, Semiconductor Quantum Dots, 2009 April 17th
53. Truman State University, Semiconductor Quantum Dots, 2009 January 23rd
54. University of Northern Iowa, Semiconductor Quantum Dots, 2008 October 29th
55. 43rd Midwest Regional ACS Meeting in Kearny, MspA Porin/ Nanoparticle assemblies for magnetic hyperthermia, 2008 October 8-11
56. 43rd Midwest Regional ACS Meeting in Kearny, Doping semiconductor quantum dots, effect of indium doping on the growth kinetics of CdSe quantum dots, Terahertz spectroscopy of charged quantum dots, 2008 October 8-11
57. Augustana College, Doping Semiconductor Quantum Dots, 2008 October 28th
58. University of Pecs-Hungary, Nanorészecskék (félvezető és fém) növekedési kinetikája, terahertz spektroszkópiája és gyógyászati alkalmazása, 2008 June 3rd
59. ACS 236th National Meeting in Philadelphia, MspA Porin: Nanoparticle assemblies for magnetic hyperthermia, 2008 August 17th
60. ACS 236th National Meeting in Philadelphia, Gift wrapped" core/shell nanoparticles for the formation of various silicides and radial nanowires, 2008 August 17th
61. ACS 236th National Meeting in Philadelphia, Heterogeneous growth kinetics of CdTe quantum dots, 2008 August 17th
62. ACS 236th National Meeting in Philadelphia, Doping semiconductor quantum dots, effect of indium doping on the growth kinetics of CdSe quantum dots, Terahertz spectroscopy of charged quantum dots, 2008 August 19th
63. KSU, 2nd Chemistry Symposium for High School Students, Nanoparticles for Improved Solar Cells, 2008 April 21st
64. KSU Physical Chemistry Seminar, Aggregation of Nanoparticles; Buffered Supersaturation Induced NP Growth, 2008 April 1st
65. KSU Midtenure Review, Beyond 'Sub' Nanotechnology, 2008 February 28th
66. KSU Physical Chemistry seminar, Terahertz Spectroscopy, 2007 September 14th
67. Kansas State University, Dep. Of Chemical Engineering, Time-resolved Terahertz Spectroscopy of Doped Semiconductor Quantum Dots, Quantum Junctions and Quantum Dot Detectors, 2006 march 16th
68. Creighton University, Time-resolved Terahertz Spectroscopy of Doped Semiconductor Quantum Dots, Quantum Junctions and Quantum Dot Detectors, 2006 march 16th
69. University of Szeged-Hungary (2007), Nanorészecskék (félvezető és fém) növekedési kinetikája, terahertz spektroszkópiája és gyógyászati alkalmazása, 2007 May 24th
70. 42nd Midwest Regional ACS Meeting in Kansas City, Mutation Enhanced Binding of Mycobacterial Porin MspA / Gold Nanoparticle Complexes, 2007 November 7-10
71. New Laser Scientist Conference Rochester, NY, Terahertz Dynamics in Nanostructures, 2006 October 12-13
72. University of Kansas, FTIR (VIS) study of Radical-Radical and Radical-Molecule Reactions and Photodissociation Processes, 2005 September 21st
73. Ohio State University, FTIR (VIS) study of Radical-Radical and Radical-Molecule Reactions and Photodissociation Processes, 2005 January 4th
74. Kansas State University, FTIR (VIS) study of Radical-Radical and Radical-Molecule Reactions and Photodissociation Processes, 2004 November 18th

75. Radical Seminar at UC Berkeley, FTIR (VIS) study of Radical-Radical and Radical-Molecule Reactions and Photodissociation Processes, 2004 November 1st
76. University of Colorado at Boulder, Spectroscopy of GaSe Nanoparticles, 2002 June 4th
77. 47th annual SPIE Meeting, Seattle, Dynamics of GaSe nanoparticles, 2002 July 5th
78. KSU PLU Award Talk, Layered Semiconductor Nanoparticles, 2002 April 18th
79. University of Kansas, Relaxation and Electron Transfer Dynamics in Bare and DTDCI Sensitized MoS₂ Nanoclusters, 2000 October 11th
80. KSU Physical Chemistry Seminar, One-step Synthesis of Methyl Isobutyl Ketone from Acetone and Hydrogen over Cu-on-MgO Catalysts, 1999 November 19th

Poster Presentations (student presentations not counted):

1. Impact of Gallium Doping on CdSe Quantum Dots, 57th Midwest Solid State Conference, Lawrence, KS, September 28th, 2013
2. 239th ACS National Meeting & Exposition, San Francisco, Doping semiconductor quantum dots, 2009 March 22nd-25th
3. Gordon Research Conference Mount Holyoke College Clusters, Nanocrystals & Nanostructures, Doping Semiconductor Quantum Dots (QD), Effect of Indium Doping on the Growth Kinetics of CdSe Quantum Dots, Terahertz Spectroscopy of Charged Quantum Dots, 2009 July 19-24
4. SOLAR Workshop in Boulder Colorado, Doping Semiconductor Quantum Dots (QD), Effect of Indium Doping on the Growth Kinetics of CdSe Quantum Dots, Terahertz Spectroscopy of Charged Quantum Dots, 2008 August 15th
5. Gordon Research Conference Lake Tahoe, Atomic and Molecular Interactions, (U. California Berkeley) "Product state distributions of vibrationally excited CO(v) for the CH(X2Π) and CH(A2Δ) channels of the C₂H + O(3P) reaction", 2004

Financial Awards and Contracts:

1. Startup funds, Kansas State University, \$540,000
2. COBRE Center for Cancer Experimental Therapeutics, \$98,000, 05/01/2007-12/31/2008 Targeting cancer with protein-nanoparticle complexes, Stefan Bossmann, Viktor Chikan, Paul Smith
3. Terry C. Johnson Center for Basic Cancer Research, \$12,000, 2007, Magnetic Hyperthermia Apparatus, Viktor Chikan and Deryl Troyer (Department of Anatomy and Physiology, KSU)
4. KSU-University Small Research Grant, \$1000, 2007, Melting Au/Fe Core/Shell Metal Nanoparticles on Silicon for Catalyzing Radial Nanowire and Nanotube Growth, Viktor Chikan
5. American Chemical Society Doctoral New Investigator, \$100,000, 05/01/2009-05/01/2011, Investigation of Dopant Incorporation in Semiconductor Nanoparticles by *in situ* Time-resolved Fluorescence Spectroscopy and Terahertz Spectroscopy, Viktor Chikan
6. KSU-Faculty Development Award, \$500, Travel to Gordon Research Conference on Clusters, Nanocrystals & Nanostructures to be held 07/19/2009 - 07/24/2009 at Mount Holyoke College in South Hadley, MA, Viktor Chikan
7. National Science Foundation STTR/SBIR phase I, \$250,000 (50,000 matching funds from Kansas Bioscience Authority), 7/1/2009 - 12/01/2010, Intelligent Low Toxicity Materials for Cancer Diagnosis and Treatment, Stefan Bossmann, Viktor Chikan, Deryl Troyer, NanoScale Co.
8. National Science Foundation, \$23,000,000, 10/01/2009-09/30/2014, Phase VI: Climate Change and Energy: Basic Science, Impacts, and Mitigation Science Initiative, Collaborative (full list of personnel is here: http://www.nsfepscor.ku.edu/ph6_personnel.html) (#0553722)
9. Retired General Harvey McCarter, \$5000
10. National Science Foundation (#1128570), \$333,810, 08/01/2011-07/31/2014 Exploring Controlled Drug Release from Magneto-Liposomes by Alternating and Pulsed Magnetic Fields, Viktor Chikan, Stefan Bossmann
11. National Science Foundation (#1608344), \$345,000, 09/01/2016-08/31/2019 Exploring Controlled Drug Release from Magneto-Liposomes by Alternating and Pulsed Magnetic Fields, Viktor Chikan

12. Department of Energy, Basic Energy Sciences (EC9980), \$598,86,0 09/15/2016-09/14/2019 Step Catalysis to Synthesize Fossil-Free Ammonia at Atmospheric Pressure, Peter Pfromm, Viktor Chikan, Bin Liu
13. Building Terahertz User facility at the Extreme Light Infrastructure (ELI ALPS), startup funds (350k euro) plus 1 student and postdoc salary
14. Synergist Therapy for Enhanced Anticancer Agent Delivery: Magnetic Field Facilitated Nanoparticle Microporation., Terry C. Johnson Cancer Center Affiliate, \$22,000, 04/01/2018, Ryan Rafferty, Viktor Chikan