Dentcho Angelov Genov, Ph.D.
J. J. Cordaro and Entergy Professor of Physics and Electrical Engineering
Director of the Center for Applied Physics Studies
College of Engineering and Science
Engineering Annex, Room 220, Louisiana Tech University, Ruston, LA 71272
Phone: (318) 257-4190, Fax: 1 (318) 257-2777
Web page: http://www.phys.latech.edu/~dgenov/
E-mail: dgenov@LaTech.edu

Education

Ph. D. Electrical Engineering, School of Electrical and Computer Engineering, Purdue University, Indiana, USA, May 2005.
M.S.A.A. Aeronautics and Astronautics; Department of Aeronautics and Astronautics, Purdue University, Indiana, USA, May 2005.
M. S. Physics and Minor Degree in Computer Science; Physics and Computer Science Departments, New Mexico State University, New Mexico, USA, December 2001.
M. S. Theoretical Physics; Faculty of Physics, Department of Theoretical Physics, Sofia University, Bulgaria, December 1998.

Professional Experience

Academic Experience

2014-present: Associate Professor in Physics, Louisiana Tech University, Ruston, Louisiana, USA.
2008-present: Fellow of the Louisiana Optical Network Initiative (LONI), Louisiana Tech University, Ruston, Louisiana, USA.
2008-2014: Assistant Professor, Physics and Electrical Engineering, Louisiana Tech University, Ruston, Louisiana, USA.
2005-2008: Associate Researcher, NSF Nanoscale Science and Engineering Center, University of California at Berkeley, Berkeley, California, USA.

Administrative Experience

- Director of the Center for Applied Physics Studies (CAPS), Louisiana Tech University, Ruston, Louisiana, USA. (2014-present)
- Louisiana Optical Network Initiative (LONI) and LA-SiGMA colloquium series administrator (2011-2012).

Professional Society Membership

- American Society of Naval Engineers, 2014-present
- Sigma Pi Sigma Physics Honor Society, 2012-present.
- Optical Society of America (OSA), 2003-present.
- International Society for Optical Engineering (SPIE), 2004-present.
- American Physical Society (APS), 2001-present.

Recognitions and Featured Research

- Our paper, J. Valentine, et.al, "Three Dimensional Optical Metamaterials Exhibiting Negative Refractive Index", *Nature* 455, 376 (2008) was ranked No. 7 among the Top 100 Stories of 2008 announced by DISCOVER magazine (2008) and is among the Top 10 Scientific Discoveries and 50 best inventions of 2008 announced by TIME magazine. Paper cited **1337** times since publication.
- Our paper, D. A. Genov, et.al. "Mimicking celestial mechanics in metamaterials", *Nature Physics* 5, 687 (2009), was featured on the **cover** of the magazine.
- Our paper, D. A. Genov and P. C. Mundru, "Quasi-effective medium theory for multilayered magneto-dielectric structures", *Journal of Optics* 16, 015101 (2014) was one of the most downloaded articles in the *Journal of Optics* for 2014 and selected in the **Top 10** list of papers published in the same journal for 2014. Our paper was also featured on the **cover** of the magazine.
- Our paper, C. Sheng, et. al, "Trapping light by mimicking gravitational lensing", *Nature Photonics* 7, 902 (2013) was featured on the online news section of *Nature* ("Curved space-time on a chip", 2013).
- "Tiny sphere bends light like a black hole does", *ScienceNews* online (2013).
- "Sphere bends light like a big star", *ScienceNews* **7**, November 2 (2013).
- "Curved spacetime mimicked on a chip", *Scientific American* (2013).
- "Space-time curvature simulated on microchip for first time ever", *The Huffington Post* and *Global Possibilities* (2013).
- "Light bending black hole mimic is first you can watch" *NewScientist* (2013).
- "Researchers device a way to mimic gravitational lensing in a way that can be seen", *Phys.org* and esciencenews.com.
- "Künstliche Gravitationslinse als Lichtfalle", *Das Physikportal* (2013).
- "Tech researcher devises trap for light, featured in international journal", noodls.com. (2013).
- "Researchers device a way to mimic gravitational lensing in a way that can be seen", at *Phys.org* and esciencenews.com (2013).
- "Light bending black hole mimic is first you can watch", *NewScientist* (2013).
- "Louisiana Tech University receives $1.1million EDA grant to support "green" innovations", *firstscience.com*, *eurekalert.org*, *verticalnews.com*, *physorg.com*, and *colegiocristoreytacna.com* (2011).
- "Louisiana Tech wins $1.1M federal grant to commercialize green technology", *siliconbayounews.com* (2011).
- "Louisiana Tech University recognizes innovators, inventors", *eurekalert.org*, *VerticalNews.com*, and *bio-medicine.org* (2011).
- "Marvelous metamaterials" (in Chinese and English), *foreign.studyez.com*, *blog.sina.com.cn*, *wenku.baidu.*com, and *jp345.com* (2011).
- "For Kids: The science of disappearing 2", *yourlocalblog.com* (2011).
- "Tech faculty, researchers honored", *louisianau.com* (2011).
- "The science of disappearing", *ScienceNewsForKids.org* (2010).
- "Transformational Optics", *Wikipedia* article featuring our paper *Nature Physics*, vol. 5 (9), pp. 687-692 (2009), (2010).
- "Louisiana Tech professor's 'metamaterials' research lands cover of international journal", *ESciencenews.com*, and *eurekalert.org* (2009).

- "COES professor's 'metamaterials' research lands cover of international journal", *brightsurf.com* (2009).
- "Louisiana physicists highlight top 10 science stories of 2008", *bio-medicine.org* (2009).
- "Louisiana Tech researcher featured in international physics journals", *highbeam.com* and *biotechmashup.com* (2009).
- "Professor's 'Metamaterial' research featured of Nature Physics", *azonano.com* (2009).
- "Testing Relativity, Black Holes And Strange Attractors In The Laboratory", *Science Daily beforeitsnews.com*, and *Berkeley Lab News Center* (2009).
- "Prestigious journal cover features COES professor", *TheTechTalk.org* (2009).
- "Research looks at how light and matter behave around black holes, other celestial objects", *PhysOrg.com* and *patrickhenrypress.info* (2009).
- "Metamaterials used to look at effects of black holes, other celestial bodies", *PhysOrg.com* (2009).
- "Using Advanced Optical Materials To Study Black Holes", *AZoNano.com* (2009).
- "Metamaterials research lands cover of international journal", *Nanowerk News* (2009).
- "Louisiana Tech researcher featured in international physics journal", *EScienceNews.com* (2009).
- "I nashata vselena e cherna dupka"(in Bulgarian*), Trud* (a full page article published in the largest Bulgarian National Newspaper) (2009).
- "Testing relativity in the lab", *PhysOrg.com*, *scienceblog.com* and *EScienceNews.com* (2009).
- "Ultrafast Laser Pulse Makes Desktop Black Hole Glow", *Wired.com* and *ArsTechnica.com* (2009).
- "A Table-Top Test of General Relativity? ", *Universe Today.com* (2009).
- "Científicos consiguen metamateriales que permiten la invisibilidad de los objetos" *ELMUNDO.ES | AGENCIAS* (in Spanish) (2008).
- "La invisibilidad a la vista" *ELPAIS.com* (in Spanish) (2008).
- "La capa invisible podría aparecer pronto" *EXonline* (in Spanish) (2008).
- "Metamateriales, "principio del camino hacia la invisibilidad", *La Jornada* (in Spanish) (2008).
- "Rendre les objets invisibles: un vieux rêve désormais envisageable"" *Cyberpresse.ca* (in French) (2008).
- "Vers l'objet invisible" *France-Amérique* (in French) (2008).
- "Des chercheurs réussissent à rendre des objets invisibles" *NouvelObs.com* (in French) (2008).
- "Une lumière qui rend invisible" *Lesoir.be* (in French) (2008).
- "Des matériaux qui rendent "invisible" !" *Europe1.fr* (in French) (2008).
- "Die Tarnkappe ist in Arbeit" *Berliner Zeitung* (in German) (2008).
- "Licht auf Abwegen" *Stuttgarter Zeitung* (in German) (2008).
- "Is the Harry Potter invisible cloak possible? The research team invented a new material" *AFPBB News* (in Japanese) (2008).
- "Optics can be freely operated with artificial materials" *Asahi News* (in Japanese) (2008).
- "Applications of invisible materials" *People Daily* (in Chinese) (2008).
- "'Invisibility', not a dream any more " *Guangzhou Daily* (in Chinese) (2008).
- "'Invisible' materials: more than a cloak " *Xinhua Net* (Xinghua Press, in Chinese) (2008).
- "New 'Invisible' materials invented" *Sina.com* (in Chinese) (2008).
- "American scientists invented 'invisible' materials" *China Daily* (in Chinese) (2008).
- "Scientists see the light in creating invisibility" *Shanghai Daily* (2008).
- "Invisibility cloak one step closer to reality" *Chicago Tribune* (2008).
- "Scientists closer to developing invisibility cloak" *Boston Globe* (2008).
- "Invisibility cloak now within sight: scientists" Brisbane Times (2008).
- "Invisibility cloak now within sight: scientists" *The Sydney Morning Herald* (2008).
- "Scientists Closer To Invisibility Cloak " *Slashdot* (2008).

- "Why Invisible Men Aren't as Close as You Think ...Yet" *Popular Mechanics* (2008).
- "Berkeley Researchers Take Big Step Toward Invisibility" *KTVU Television* (2008).
- "Invisibility cloak a step closer as scientists bend light 'the wrong way'" *Daily Mail* (2008).
- "Scientists shed light on invisibility'" *The Guardian* (2008).
- "Negative index of refraction a big positive for nanocircuit R&D " *R&D Magazine* (2008).
- "UC Berkeley: Invisibility Cloak Could Become Reality " *KCBS Radio* (with audio) (2008).
- "Secrets of creating invisibility 'cloak' come to light" *Irish Times* (2008).
- "Scientists take step towards invisibility cloak" *The Australian* (2008).
- "Invisibility Cloak One Step Closer: New Metamaterials Bend Light Backwards" *Science Daily* (2008).
- "UC Berkeley Scientists Invent 'Invisibility' Cloak" *AOL News (video clips)* (2008)
- "Bending Light In Pursuit Of Invisibility" *NPR (audio)* (2008).
- "Progress Seen toward Making Objects Invisible" *VOA News (audio)* (2008).
- "Invisibility Shields One Step Closer With New Metamaterials That Bend Light Backwards" *NSF News* (2008).
- "Scientists closer to developing invisibility cloak" *CBC News* (2008).
- "Invisibility Cloaks Possible at Nano Level" *Discovery* (2008).
- "Scientists closing in on invisibility cloak" *MSNBC* (2008).
- "Poof! Scientists Closer to Invisibility Cloak" *ABC News* (2008).
- "Scientists closer to invisibility" *ABC 7* (2008).
- "Scientists Say Invisibility Cloak Possible" *CBS News* (with video clips in the page) (2008).
- "Cal Scientists Get Closer To 'Invisibility' Cloak" *CBS5* (with video clips in the page) (2008).
- "Scientists Say Invisibility Cloak Now Possible" *FOX News* (2008).
- "The Invisible Man: A scientific breakthrough" *CNET News* (2008).
- "Closing in on Invisible Cloak" *Photonics.com* (2008).
- "Science close to unveiling invisible man" *Times Online* (2008).
- "'Invisibility' technology may help view tiny objects" *Canadian TV* (2008).
- "A step toward the invisibility cloak: Bending light" *International Herald Tribune* (2008).
- "Light bent the wrong way--can an invisibility cloak be far behind?" *Scientific American* (2008).
- "Two improved invisibility devices show themselves"*USA Today* (2008).
- "Invisibility-Cloak Materials Bend Light "Backward" *National Geographic* (2008).
- "Two invisibility cloak materials developed" *Telegraph.co.uk* (2008).
- "Metamaterials Hold Promise For Invisibility Cloaks" *InformationWeek* (2008).
- "Invisibility cloak now within sight: scientists (Update 2)" *PhysOrg.com* (2008).
- "Invisibility cloak within sights" *NEWS.com.au* (2008).
- "Invisibility cloak within sight" *ABC Science (Australia)* (2008).
- "Invisibility within sight" *Science News* (2008).
- "Visible Light Enters the Bizarro World" *ScienceNow* (2008).
- "Invisible cloak no longer a fiction" *CNN news* (2008).
- "Invisibility cloak now within sight: scientists" *AFP* (2008).
- "Invisibility cloak one step closer, scientists say" *REUTERS* (2008).
- "Surpassing Nature, Scientists Bend Light Backward" *The New York Times* (2008).
- "Invisibility cloak 'step closer'" *BBC News* (2008).
- "Now you see it, now you don't" *The Los Angeles Times* (2008).
- "Cal scientists on the trail of invisibility" *The San Francisco Chronicle* (2008).

Selected Invited Seminars and Lectures

- D. A. Genov, "The Art of Guiding and Trapping Light Using Metamaterials and Much More", *The 2015 International OSA Network of Students (IONS) Meeting*, Nanjing, China, July 10-12, (2015) (OSA Traveling Lecturer).
- D. A. Genov "*The art of trapping light by mimicking gravity on a chip"*, Physics Seminar, University of Louisiana at Lafayette, Lafayette, LA, January 28, 2015.
- D. A. Genov "*Electromagnetic metamaterials and how to make the Harry Potter invisibility cloak and other things"*, IfM Seminar, Louisiana Tech University, Ruston, LA, March 27, 2013.
- D. A. Genov "*Trapping light by mimicking gravity"*, Nanjing University, Nanjing, China, August 20, 2012.
- D. A. Genov "*Electromagnetic metamaterials and how to make the Harry Potter invisibility cloak"*, IfM Seminar, Louisiana Tech University, Ruston, LA, March 15, 2011
- "*Redefining the field of Optics with Electromagnetic Metamaterials"*, Department of Applied Physics, Yale University, New Haven, CT, December 8, 2010.
- "*Controlling light with Artificial Optical Materials*", IfM Seminar, Louisiana Tech University, Ruston, LA, March 26, 2010.
- "*Controlling light with Artificial Optical Materials*", The LONI Institute All-Hands Meeting, Baton Rouge, LA, February 10, 2010.
- "*Artificial Optical Materials molding the flow of light*", Physics Seminar Series, Louisiana Tech University, Ruston, LA, October 22, 2009.
- "*Controlling light with Artificial Optical Materials*", CAM Seminar Series, Louisiana Tech University, Ruston, LA, October 8, 2009.
- "*Controlling light with Electromagnetic Metamaterials*", LONI HPC Workshop, Louisiana Tech University, Ruston, LA, October 7, 2009.
- "*Electromagnetic properties of complex metamaterials: from near field imaging with super resolution to mimicking celestial phenomenon in laboratory conditions*", Colloquium Series at the Center for Computational &Technology (CCT), Louisiana State University, Baton Rouge, LA, March 27, 2009.
- "*Electromagnetic metamaterials: from imaging with super resolution to mimicking celestial phenomenon in the lab*", The LONI Institute All-Hands Meeting, Baton Rouge, LA, October 31, 2008.
- "*Electromagnetic properties of complex metamaterials: from near field imaging with super resolution to mimicking celestial phenomenon in laboratory conditions*", College of Engineering and Science, Louisiana Tech University, Ruston, LA, January, 2008.
- *"The exciting world of surface plasmons - order vs. chaos*", Department of Materials Science & Engineering, Drexel University, Philadelphia, PA, February, 2007.
- "*The exciting world of surface plasmons - order vs. chaos*", Department of Electrical and Computer Engineering, University of Texas at Austin, Austin, TX, March, 2006.
- "*The exciting world of surface plasmons - from order to chaos*", Department of Electrical and Computer Engineering, University of California, San Diego, CA, April, 2005.
- "*Localization-delocalization transition of the collective electronic response in inhomogeneous metal composites*", Department of Physics, Northwestern University, Evanston, IL, May, 2005.
- *"Surface plasmons excitation in complex media: concurrent existence of chaotic and regular states*", Los Alamos National Laboratory, NM, May, 2005.
- "*Electromagnetic properties of inhomogeneous media*", Physics Department, University of California, Berkeley, CA, September, 2005.

Scholarship

Publication and Citation Index (Google Scholar, September 2016)

- Book Chapters: **(3)**
- Peer-Reviewed Journals and Conference Proceeding Papers: **(83)**
- Other Conference Papers and Abstracts: **(67)**
- Total Citations: **(59997)**
- h-Index: ***h*-23**

Invited Book Chapters

1. K. Seal and D. A. Genov, "Surface Plasmon States in Inhomogeneous Media at Critical and Subcritical Metal Concentrations", in: *International Journal of Optics*, special issue "*Optical Antennas*", Ed. Mostafa Salem, Publisher: Hindawi Publishing Corporation, New York, NY 10022, USA (2012).
2. D. A. Genov, A. K. Sarychev and V. M. Shalaev, "Surface Plasmons Excitation in Semicontinuous Metal Films", in: *Frontiers in Condensed Matter Physics Research*, Ed. John V. Chang, Publisher: Nova Science Publishers, Inc. Hauppauge, NY, USA (2006).
3. D. A. Genov, A. K. Sarychev and V. M. Shalaev, "Local Field Statistic and Plasmon Localization in Random Metal-Dielectric Films", in: *Wave Scattering in Complex Media: From Theory to Applications*, Eds: B. A. van Tiggelen and S. E. Skipetrov, Publisher: Kluwer Academic Publishers, Dordrecht, Netherlands (2003).

Articles Submitted to Peer-Reviewed Journals

1. R. K Vinnakota and D. A. Genov, "An extraordinary high thermo-optical nonlinearity of surface plasmon waves at doped semiconductor interfaces and implications for fast all-optical switching", submitted to *Physical Review Letters* (2016).

Articles in Peer-Reviewed Journals

2. S. R. Animilli and D. A. Genov, "Geometrical phase transition and local filed moments in bulk metal-dielectric composite media", accepted *Physical Review B* (2016).
3. N. Blackman and D. A. Genov, "Quantum confinement effects in metal nanoparticles", accepted *Journal of Optical Society of America B* (2016).
4. C. Sheng, H. Liu, S. Zhu, and D. A. Genov, "Omnidirectional optical attractor in structured gap-surface plasmon waveguide", *Scientific Reports*, vol. 6, pp. 23514, (2016).
5. C. Sheng, H. Liu, S. Zhu, and D. A. Genov, "Active control of electromagnetic radiation through an enhanced thermo-optic effect", *Scientific Reports*, vol. 5, pp. 8835, (2015).
6. R. K Vinnakota and D. A. Genov, "Terahertz optoelectronics with surface plasmon polariton diode", *Scientific Reports*, vol. 4, pp. 4899 (2014).
7. V. K. Pappakrishnan, P. C. Mundru, and D. A. Genov, "Repulsive Casimir force in magnetodielectric plate configurations", *Physical Review B*, vol. 89, pp. 045430 (2014).
8. D. A. Genov and P. C. Mundru, "Quasi-effective medium theory for multilayered magneto-dielectric structures", *Journal of Optics*, vol. 16, pp. 015101 (2014). (Featured on the **cover** of the magazine and selected in the **Top 10** papers published in the Journal of Optics for 2014).

9. D. A. Genov, H. Liu, S. Cong, Y. Wang, S. Zhu, "Trapping Light By Mimicking Gravitational Lensing", *Proc. of SPIE Int. Soc. Opt. Eng.*, vol. 8806, pp. 58 (2013).
10. C. Sheng, H. Liu, Y. Wang, S. N. Zhu, and D. A. Genov, "Trapping light by mimicking gravitational lensing", *Nature Photonics*, vol. 7, pp. 902-906 (2013).
11. S. R. Zivanovic, D. A. Genov, A. Thapa, M. Koorie, and S. Animilli, "Surface Plasmon Enhanced P3HT:PCBM Photovoltaic Devices", *Proc. of SPIE Int. Soc. Opt. Eng.*, vol. 8471-37, (2012).
12. P. C. Mundru, V. K. Pappakrishnan and D. A. Genov, "Material- and geometry-independent multishell cloaking device", *Physical Review B*, vol. 85, pp. 045402 (2012). (selected by the editors of the journal to be **Editors' Suggestion**).
13. D. A. Genov, "Isotropic and Anisotropic Continuous Index Photon Traps Based on Composite Optical Materials", *Proc. of SPIE Int. Soc. Opt. Eng.*, vol. 8471, pp. 37, (2012).
14. V. Kumaran, P. C. Mundru and D. A. Genov, "Repulsive Casimir force using metamaterials", *Proc. of SPIE Int. Soc. Opt. Eng.*, vol. 8455, pp. 30 (2012).
15. P. C. Mundru, V. Kumaran and D. A. Genov, "Generic Multi-shell Cloak", *Proc. of SPIE Int. Soc. Opt. Eng.*, vol. 8457, pp. 145 (2012).
16. D. A. Genov, "General relativity: Optical black-hole analogues", *Nature Photonics*, vol. 5, pp. 76-78 (2011).
17. D. A. Genov, R. F. Oulton, G. Bartal, and X. Zhang, "Anomalous spectral scaling of light emission rates in low-dimensional metallic nanostructures", *Physical Review B*, vol. 83, pp. 245312 (2011).
18. A. Ishikawa, S. Zhang, D. A. Genov, G. Bartal, and X. Zhang, "Subwavelength terahertz waveguide using negative permeability metamaterial", *Materials Research Society Symposium Proceedings*, vol. 1182, pp. 77-82, (2009).
19. D. A. Genov, S. Zhang, and X. Zhang, "Mimicking celestial mechanics in metamaterials", *Nature Physics*, vol. 5 (9), pp. 687-692 (2009). (Paper cited **236** times since publication, and featured on the **cover** of the magazine)
20. A. Ishikawa, S. Zhang, D A. Genov, G. Bartal, and X. Zhang, "Deep Subwavelength Terahertz Waveguides Using Gap Magnetic Plasmon", *Physical Review Letters*, vol. 102, pp. 043904 (2009).
21. M. Ambati, D. A. Genov, R. Oulton and X. Zhang. "Active Plasmonics: Surface Plasmon interaction with optical emitters", *IEEE Journal of Selected Topics in Quantum Electronics*, vol. 14, pp. 1395 (2008).
22. M. Ambati, S. Nam, E. Ulin-Avila, D. A. Genov, G. Bartal and X. Zhang."Observation of stimulated emission of surface plasmon polaritons", *Nano Letters*, vol. 8(11), pp. 3998–4001 (2008). (Paper cited **150** times since publication)
23. S. Han, Yi Xiong, D. Genov, Z. Liu, G. Bartal and X. Zhang, "Ray Optics at a Deep-Subwavelength Scale: A Transformation Optics Approach", *Nano Letters*, vol. 8, pp. 4243 (2008).
24. J. Valentine, S. Zhang, T. Zentgraf, E. Ulin-Avila, D. A Genov, G. Bartal and X. Zhang, "Three Dimensional Optical Metamaterials Exhibiting Negative Refractive Index", *Nature*, vol. 455, pp. 376 (2008). (Paper cited **1423** times since publication)
25. S. Zhang, D. A. Genov, Y. Wang, M. Liu and X. Zhang, "Plasmon-Induced Transparency in Metamaterials", *Physical Review Letters*, vol. 101, pp. 047401 (2008). (Paper cited **1162** times since publication)
26. R. Oulton, V. Sorger, D. A. Genov, D. F. P. Pile, X. Zhang, "A hybrid plasmonic waveguide for subwavelength confinement and long range propagation", *Nature Photonics*, vol. 2, pp. 496, (2008). (Paper cited **1113** times since publication)
27. S. Zhang, D. A. Genov, C. Sun, and X. Zhang, "Cloaking of matter waves", *Physical Review Letters*, vol. 100, pp. 123002 (2008). (Paper cited **246** times since publication)

28. D. A. Genov, M. Ambati, and X. Zhang, "Surface Plasmon Polariton Amplification in Planar Metal Films", *IEEE Journal of Quantum Electronics*, vol. 43, No.11, pp. 1104 (2007).
29. Y. M. Liu, G. Bartal, D. A. Genov, and X. Zhang, "Sub-wavelength Discrete Solitons in Nonlinear Metamaterials", *Physical Review Letters*, vol. 99, pp. 153901 (2007). (Paper cited **196** times since publication)
30. H. Liu, D. A. Genov, D. M. Wu, Y.M. Liu, Z. W. Liu, C. Sun, S. N. Zhu, and X. Zhang, "Magnetic Plasmons Hybridization and Optical Activity at Optical Frequencies in Metallic Nanostructures", *Physical Review B- Brief Reports*, vol. 76, pp. 073101 (2007). (Paper cited **181** times since publication)
31. D. A. Genov, K. Seal, X. Zhang, V. M. Shalaev, A. K. Sarychev, Z. C. Ying and H. Cao, "Collective Electronic States in Inhomogeneous Media at Critical and Subcritical Metal Concentrations", *Physical Review B - Rapid Communications*, vol. 75, pp. 201403(R), (2007).
32. H. Liu, D. A. Genov, D. M. Wu, Y. M. Liu, J. M. Steele, C. Sun, S. N. Zhu, and X. Zhang, "Magnetic Plasmon Propagation Along a Chain of Connected Subwavelength Resonators at Infrared Frequencies", *Physical Review Letters*, vol. 97, pp. 243902 (2006). (Paper cited **143** times since publication).
33. D. A. Genov, K. Seal, H. Noh, A. K. Sarychev, V. M. Shalaev, X. Zhang, and H. Cao, "Extraordinary localization of collective electronic states in random media", *Proc. of SPIE Int. Soc. Opt. Eng.*, vol. 6320, pp. 1-10 (2006).
34. K. Seal, D. A. Genov, A. K. Sarychev, H. Noh, V. M. Shalaev, Z.C. Ying, and H. Cao, "Coexistence of localized and delocalized surface plasmon modes in percolating metal films", *Physical Review Letters*, vol. 97, pp. 206103 (2006).
35. D. A. Genov, K. Seal, A. K. Sarychev, H. Noh, V. M. Shalaev, Z.C. Ying, X. Zhang, and H. Cao, "Surface Plasmon Delocalization by Short-Range Correlations in Percolating Metal Systems", *Applied Physics B: Lasers and Optics*, vol. 84, No. 1-2, pp. 205 (2006).
36. K. Seal, H. Noh, A. Yamilov, H. Cao, A. K. Sarchev, D. A. Genov, V. M. Shalaev, Z. C. Ying, "Near-field intensity correlations in semicontinuous metal films", *Quantum Electronics and Laser Science*, vol. 3, pp. 1497-1499 (2005).
37. D. A. Genov, A. K. Sarychev and V. M. Shalaev, "Surface plasmon excitation and correlation-induced localization-delocalization transition in semicontinuous metal films", *Physical Review B – Brief Report*, vol. 72, pp. 113102 (2005).
38. W. Cai, D. A. Genov, and V. M. Shalaev, "Superlens Based on Metal-Dielectric Composites", *Physical Review B*, vol. 72, pp. 193101 (2005). (Paper cited **156** times since publication)
39. K. Seal, A. K. Sarychev, H. Noh, D. A. Genov, A. Yamilov, V. M. Shalaev, Z. C. Ying, and H. Cao, "Near-field intensity correlations in semicontinuous metal-dielectric films", *Physical Review Letters*, vol. 94, pp. 226101 (2005).
40. D. A. Genov, A. K. Sarychev, and V. M. Shalaev, "Localization-delocalization transition in metal-dielectric films", *Proc. of SPIE Int. Soc. Opt. Eng.*, vol. 5512, pp. 20-27 (2004).
41. V. Yordanov, D. A. Genov, I. Ivanova–Stanik, and A. Blagoev, "Ionization Growth in the Breakdown of Plasma Focus Discharge", *Vacuum*, vol. 76, pp. 365 (2004).
42. D. A. Genov, A. Wei, A. K. Sarychev and V. M. Shalaev," Resonant field enhancements from metal nanoparticles arrays", *Nano Letters*, vol. 4 (1): pp. 153, (2004). (Paper cited **376** times since publication)
43. D. A. Genov, A. K. Sarychev and V. M. Shalaev, "Metal-dielectric composite filters with controlled spectral windows of transparency", *Journal of Nonlinear Optical Physics& Materials*, vol. 12, Issue 4, pp. 419, (2003).

44. D. A. Genov, A. K. Sarychev, and V. M. Shalaev, "Plasmon Localization and Local Field Distribution in Metal-Dielectric Films", *Physical Review E*, vol. 67, Issue 5, pp. 56611 (2003).
45. K. Seal, D. A. Genov, M. A. Nelson, Z. C. Ying, A. K. Sarychev and V. M. Shalaev, "Growth, morphology, and optical and electrical properties of semicontinuous metallic films", *Physical Review B*, vol. 67, Issue 3, pp. 35318 (2003).
46. A. K. Sarychev, D. A. Genov, A. Wei, and V. M. Shalaev, "Periodical Arrays of Optical Nanoantennas", *Proc. of SPIE Int. Soc. Opt. Eng.* , vol. 5218, pp. 81-92 (2003).
47. D. A. Genov, K. Seal, Mark. A. Nelson, A. K. Sarychev, Z. C. Ying and V. M. Shalaev, "Local Field Distribution in Random Metal-Dielectric films; Theory and Experiment", *Physica B: Physics of Condensed Matter*, vol. 338, Issue 1-4, pp. 228 (2003).
48. K. Seal, D. A. Genov, M. A. Nelson, Z.C. Ying, A. K. Sarychev and V. M. Shalaev, "Metal Coverage Dependence of Local Optical Properties of Semicontinuous Metallic Films", *Journal of Modern Optics*, vol. 49, NO. 14(15): pp. 2423, (2002).
    Erratum: *Journal of Modern Optics*, vol. 50, NO. 9: pp. 1497 (2003).
49. D. A. Guenov[#] and A. B. Blagoev, "Numerical Model of Low-Current Negative Glow Helium Plasma", *Bulgarian Journal of Physics*, vol. 26, Nos ¾ , pp.148-156 (1999).

Peer-Reviewed Conference Proceeding Papers

1. R. K. Vinnakota, and D. A. Genov, "Terahertz Optoelectronic Switching with Surface Plasmon Polariton Diode", *Proceedings of Louisiana EPSCoR RII CIMM 2016 Symposium*, Baton Rouge, LA, July 25 (2016).
2. R. K. Vinnakota, C. Maher, and D. A. Genov, "Self-consistent modeling of laser matter interactions pertaining to laser- based 3D printing of metals & alloys", *Proceedings of Louisiana EPSCoR RII CIMM 2016 Symposium*, Baton Rouge, LA, July 25 (2016).
3. S. Ashish, S. R. Animilli, S. Zivanovic and D. A. Genov, "Analytical model of thin film silicon solar cell", in *Proceedings of IMECE15* (2016).
4. D. A. Genov, "Inhomogeneous plasmonic materials for nanoscale energy localization and enhanced solar cell applications", Energy Materials Nanotechnology (EMN) Conference, Dubai, United Arab Emirates (April 1-4, 2016) (Invited Talk).
5. D. A. Genov and P. C. Mundru, "Quasi-effective medium theory for multi-shell magneto-dielectric structures", Conference on Lasers and Electro-Optics (CLEO:QELS), CLEO:QELS FS, San Jose, CA. June (2016).
6. R. K. Vinnakota and D. A. Genov, "Terahertz Optoelectronic Switching with Surface Plasmon Polariton Diode", Conference on Lasers and Electro-Optics (CLEO:QELS), CLEO:QELS FS, San Jose, CA. June (2016).
7. C. Sheng, H. Liu, Y. Wang, S. N. Zhu and D. A. Genov, "Trapping Light By Mimicking Gravitational Lensing", *Nonlinear Optics*, pp. NM3B.1, Kauai, July 26-31 (2015).
8. H. Liu, C. Sheng, S. N. Zhu and D. A. Genov, "Trapping Light By Mimicking Gravitational Lensing", *OSA Annual Meeting Proceedings*, Frontiers in Optics (FiO), pp. FTU5D, Tucson, AR, October 19-23 (2014).
9. C. Sheng, H. Liu, Y. Wang, S. N. Zhu and D. A. Genov, "Trapping Light By Mimicking Gravitational Lensing", Conference on Lasers and Electro-Optics (CLEO:QELS), CLEO:QELS FS, pp. QTh4A.7, San Jose, CA. June (2013).

[#] Since August 2000 the spelling of my last name has changed to Genov

10. C. Sheng, H. Liu, Y. Wang, S. Zhu and D. A. Genov, "Trapping Light By Mimicking Gravitational Lensing", *Nanophotonics, Nanoelectronics and Nanosensor*, N3, NSu3B.1, Wuhan, China, May 26 (2013).
11. D. A. Genov, "Molding the Flow of Light with Artificial Optical Materials", *OSA Annual Meeting*, Frontiers in Optics (FiO), Rochester, NY, October 24-28, OSA Technical Digest, paper QPDB2 (2010). (Invited Paper).
12. J. Valentine, S. Zhang, T. Zentgraf, E. Ulin-Avila, D. A. Genov; G. Bartal, and X. Zhang, "Demonstration of Nagative Refraction Index in a Three-Dimensional Optical Metamaterial", *Quantum Electronics and Laser Science Conference* (QELS), San Jose, CA, 4-9 May, OSA Technical Digest, paper QPDB2 (2008).
13. S. Zhang, Genov, D. A. Genov, S. Cheng, and X. Zhang, "Cloaking of Cold Atoms", *OSA Annual Meeting*, Plasmonics and Metamaterials (META_PLAS), Rochester, NY, October 19-23, OSA Technical Digest, paper MMB4 (2008).
14. G. Bartal, G. Lerosey, Y. Liu, D. A. Genov, and X. Zhang, "Deep Sub-Wavelength Confinement in metal-Dielectric Multilayers", *Conference on Quantum Electronics and Laser Science* (QELS), San Jose, CA, 4-9 May, OSA Technical Digest Series (paper QWA3), art. no. 4553238 (2008).
15. X. Zhang, G. Bartal, Y. Liu, D. A. Genov, "Subwavelength Discrete Solitons in Nonlinear Metallic Waveguide Arrays", *OSA Annual Meeting*, Frontiers in Optics (FiO), Rochester, NY, October 19-23, OSA Technical Digest, paper FThC1 (2008).
16. S. Han, Y. Xiong, D. A. Genov, Z. Liu, G. Bartal, and X. Zhang, "Ray Optics at Sub-Wavelength Scale", *OSA Annual Meeting*, Plasmonics and Metamaterials (META_PLAS), Rochester, NY, October 19-23, OSA Technical Digest, paper MMB2 (2008).
17. J. Valentine, S. Zhang, T. Zentgraf, E. Ulin-Avila, D. A. Genov, G. Bartal, and X. Zhang, "Negative Refractive Index in a Bulk Optical Metamaterial", *OSA Annual Meeting*, Plasmonics and Metamaterials (META_PLAS), Rochester, NY, October 19-23, OSA Technical Digest, paper MTuC6 (2008).
18. S. Zhang, D. A. Genov, Y. Wang, M. Liu, and X. Zhang, "Plasmonic Metamaterial with Coupling Induced Transparency", *OSA Annual Meeting*, Plasmonics and Metamaterials (META_PLAS), Rochester, NY, October 19-23, OSA Technical Digest, paper MWC6 (2008).
19. A. Ishikawa, S. Zhang, D. A. Genov, G. Bartal, and X. Zhang, "Subwavelength Confinement and Guiding of Terahertz Waves by Gap Magnetic Plasmon Waveguides", *OSA Annual Meeting*, Plasmonics and Metamaterials (META_PLAS), Rochester, NY, October 19-23, OSA Technical Digest, paper MMD2 (2008).
20. D. A. Genov and X. Zhang, "Electromagnetic properties of complex metamaterials: from near field imaging with super resolution to mimicking celestial phenomenon in laboratory conditions", *ICCES Conference*, Honolulu, Hawaii, 17-22 March, paper ICCES0820071214307 (2008). **(**Invited Paper**).**
21. D. A. Genov, H. Liu, D. W. Wu, Y. M. Liu, C. Sun, S. N. Zhu, and X. Zhang, "Magnetic Plasmon Resonances and Optical Activity", *Conference* on *Quantum Electronics and Laser Science* (QELS), Baltimor, Maryland, 6-22 May, OSA Technical Digest Series (paper QThl3), art. no. 4431696 (2007).
22. G. Bartal, Y. Liu, D. A. Genov, and X. Zhang, "Sub-wavelength Discrete Solitons in Nonlinear Matamaterials", *OSA Topical Meeting*; Photonic Metamaterials: From Random to Periodic (META), Snow King Resort, Jackson Hole, Wyoming, June 4-7, OSA Technical Digest Series, paper TuB29 (2007).
23. H. Cao, K. Seal, A. K. Sarychev, D. A. Genov, V. M. Shalaev, A. Yamilov, H. Noh, Z. C. Ying, "Near-field Intensity Correlations in Semicontinuous Metal-dielectric Films", *Progress*

in Electromagnetics Research Symposium (PIERS), Cambridge, Massachusetts, 26-29 March, paper 050907151848 (2006).

24. K. Seal, H. Noh, H. Cao, D. A. Genov, A. K. Sarchev, V. M. Shalaev, Z. C. Ying, "Near-field Intensity Statistics in Semicontinuous Metal-Dielectric Films", *OSA Annual Meeting*, Quantum Electronics and Laser Science Conference (QELS), Rochester, NY, October 8-12, OSA Technical Digest, paper QTuF5 (2006).
25. K. Seal, D. A. Genov, A. K. Sarchev, H. Noh, H. Cao, V. M. Shalaev, Z. C. Ying, H. Cao, "Coexistence of Localized and Delocalized Surface Plasmon Modes in Semicontinuous Metal-Dielectric Films", *OSA Annual Meeting*, Photonic Metamaterials: From Random to Periodic (META), Rochester, NY, October 8-12, OSA Technical Digest Series, paper WA3 (2006).
26. H. Cao, K. Seal, H. Noh, A. Yamilov, A. K. Sarchev, D. A. Genov, V. M. Shalaev, Z. C. Ying, "Near-field intensity correlations in semicontinuous metal films", *2005 European Quantum Electronics Conference* (EQEC '05), vol. 205, pp. 340 (2005).
27. H. Cao, K. Seal, A. K. Sarychev, D. A. Genov, V. M. Shalaev, A. Yamilov, H. Noh, Z. C. Ying "Near-field intensity correlations in semicontinuous metal films", *OSA Annual Meeting*, Frontiers in Optics (FiO), Tucson, Arizona, October 16-20, OSA Technical Digest Series, paper FThC3 (2005).
28. D. A. Genov, A. K. Sarychev and V. M. Shalaev, "Localization-delocalization transition in inhomogeneous metal-dielectric films", *OSA Annual Meeting*, Rochester, NY, October 10-14, OSA Technical Digest, paper FWP1 (2004).
29. D. A. Genov, A. K. Sarychev and V. M. Shalaev, "Photo-modification of the optical response in metal-dielectric composites", *OSA Annual Meeting*, Frontiers in Optics (FiO), Rochester, NY, October 10-14, OSA Technical Digest, paper FThJ3 (2004).
30. V. Yordanov, D. A. Genov, I. Ivanova–Stanik and A. Blagoev, "Ionization growth in the breakdown of plasma focus discharge", *XIII International School of Vacuum, Electron and Ion Technologies*, Varna, Bulgaria, September 10-15, pp.1-5, (2003).
31. D. A. Genov, A. Wei, A. K. Sarychev and V. M. Shalaev, "Surface-enhanced Raman scattering in periodic and quasi-periodic metal-dielectric films", *OSA Annual Meeting*, Frontiers in Optics (FiO), Tucson, Arizona, October 5-9, OSA Technical Digest, paper ThNN2, pp.132 (2003).
32. D. A. Genov, A. K. Sarychev and V. M. Shalaev, "Short-range correlations and localization-delocalization transition in metal-dielectric films", *OSA Annual Meeting*, Frontiers in Optics (FiO), Tucson, Arizona, October 5-9, OSA Technical Digest, paper MT42, (2003).
33. A. K. Sarychev, D. A. Genov, V. M. Shalaev, "Metal-dielectric composite filters with controlled absorption and transparency bands", *OSA Annual Meeting*, Frontiers in Optics (FiO), Tucson, Arizona, October 5-9, OSA Technical Digest, paper ThNN3, pp.134 (2003).
34. V. M. Shalaev, A. K. Sarychev, D. A. Genov, E. N. Khaliullin, V. P. Drachev, V. A. Podolskiy, R. L. Armstrong, V. P. Safonov, S. G. Rautian, and P. Gadenne, "Plasmonic Nanophotonics: Manipulating Light and Sensing Molecules", *IQEC Technical Digest, International Quantum Electronics Conference*, Moscow, Russia, June 22-27, pp. 412, (2002).

Other Conference Papers and Abstracts

1. R. K. Vinnakota, C. Maher, and D. A. Genov, "Thermo-optical Model of Laser Matter Interactions in Selective Laser melting Processes", *2016 CIMM Symposium*, Baton Rouge, LA, July 25 (2016).
2. R. K. Vinnakota and D. A. Genov, "Optoelectronic Switching in Mid-Infrared", *Louisiana Academy of Sciences 90th Annual Meeting*, Alexandria, LA, April 23 (2016). (Best Paper Award)

3. N. Blackman and D. A. Genov, "Quantum corrections to classical size effects in metallic nanoparticles", *Louisiana Academy of Sciences 90th Annual Meeting*, Alexandria, LA, April 23 (2016).
4. B. Touchet and D. A. Genov, "The electron self-energy paradox", *Louisiana Academy of Sciences 90th Annual Meeting*, Alexandria, LA, April 23 (2016).
5. M. Alsaleh and D. A. Genov, "Semiconductor based electromagnetic metamaterials with negative index of refraction", *Louisiana Academy of Sciences 90th Annual Meeting*, Alexandria, LA, April 23 (2016).
6. C. C. VanHook and D. A. Genov, "Effective Permittivity and Permeability of Metamaterials: Methods of Extraction from Experimental and Theoretical Data", *2016 Annual University of Louisiana System Academic Summit*, Nicholls State University, Thibodaux, LA, April 14-15 (2016).
7. R. Vinnakota, S. Rakesh Animilli, and D. A. Genov, "Thermo-optical model of laser matter interactions in selective laser melting", *CIMM's 2016 Technical Conference*, Louisiana State University, Baton Rouge, LA, April 8 (2016).
8. C. C. VanHook, B. Touchet and D. A. Genov, "Effective Permittivity and Permeability of Metamaterials: Methods of Extraction from Experimental and Theoretical Data", *2016 LA Tech Student Research Symposium*, Ruston, LA, February 26 (2016).
9. N. Blackman and D. A. Genov, "Quantum corrections to classical size effects in metallic nanoparticles", *2016 LA Tech Student Research Symposium*, Ruston, LA, February 26 (2016). (Graduate Winner: Second Place)
10. D. A. Genov, "Terahertz Optoelectronics with Surface Plasmon Polaritions", *The 7th International Conference on Information Optics and Photonics (CIOP 2015)*, Nanjing, China, July 12-15, (2015) (Invited Talk).
11. D. A. Genov, "The Art of Guiding and Trapping Light Using Metamaterials and Much More", *The 2015 International OSA Network of Students (IONS) Meeting*, Nanjing, China, July 10-12, (2015) (OSA Traveling Lecturer Invited Talk).
12. D. A. Genov, and V. K. Pappakrishnan, "Quantum Levitation in Metamaterial Plate Configurations", *The 7th International Conference on Surface Plasmon Photonics*, Jerusalem, Israel, May 31 - June 5 (2015).
13. D. A. Genov, and R. K. Vinnakota, "Terahertz Optoelectronic Switching with Surface Plasmon Polariton Diode", *The 7th International Conference on Surface Plasmon Photonics*, Jerusalem, Israel, May 31 - June 5 (2015).
14. D. A. Genov, and S. Selmic "Inhomogeneous Metal-Dielectric Films for High efficiency Solar Cells", *Naval Future Force Science and Technology Expo 2015*, Washington, DC, February 4-5 (2015).
15. H. Liu, C. Sheng, S. N. Zhu and D. A. Genov, "Trapping Light By Mimicking Gravitational Lensing", *The 5th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META)*, pp 131, Singapore, May 20-23, (2014) (Invited Talk).
16. H. Liu, C. Sheng, S. N. Zhu and D. A. Genov, "Trapping Light By Mimicking Gravitational Lensing", *Annual APS March Meeting*, Denver, CO, March 3-7, 2014 (paper BAPS.2014.MAR.A33.7).
17. D. A. Genov, "A New Microscopic Solar Cell Concentrator Technology", *Southeast Symposium on Contemporary Engineering Topics (SSCET)*, New Orleans, LA, November 1, (2013) (Invited Talk).
18. D. A. Genov, "Surface Plasmon Polariton Diode: Toward THz optoelectronics", *AFRL Minority Leaders Program Review*, Dayton, OH, September 24 (2013).
19. S. R. Animilli and D. A. Genov, "Geometrical phase transitions in 3D metal-dielectric composite media", *Louisiana Academy of Sciences 87th Annual Meeting*, Grambling, LA, March 9 (2013).

20. S. Cong, H. Liu, Y. Wang, S. Zhu, D. A. Genov, "Trapping Light By Mimicking Gravitational Lensing", *7th International Conference on Materials for Advance Technologies* (ICMAT 2013), Suntec, Singapore, June 30- July 5 (2013).
21. S. R. Animilli and D. A. Genov, "Composite Media for Solar Cell Applications", *2012 Student Research Symposium,* Ruston, LA, April 12 (2012) (Graduate Winner).
22. V. Kumaran, P. C. Mundru and D. A. Genov, "Casimir Force Reversal Using Metamaterials", *22nd Annual Mardi Gras Conference*, Baton Rouge, LA, February 16-17 (2012) (Best Poster Award).
23. P. C. Mundru, V. Kumaran and D. A. Genov, "Multishell Generic Cloaking Device", *22nd Annual Mardi Gras Conference*, Baton Rouge, LA, February 16-17 (2012).
24. D. A. Genov, "Inhomogeneous metal-dielectric films for high efficiency solar cells", *2011 CAREER Award Regional Forum*, Baton Rouge, November 8-9 (2011).
25. P. C. Mundru and D. A. Genov, "Analytical Theory and Numerical Analysis of a Generic Cloaking System", *COES Graduate Student Conference,* Ruston, LA, October 27 (2011).
26. S. R. Animilli, S. Zivanovic and D. A. Genov, "Complex Media for Solar Cell Applications", *COES Graduate Student Conference,* Ruston, LA, October 27 (2011).
27. V. Kumaran and D. A. Genov, "Casimir-Polder Force Reversal between Parallel Plates Using Metamaterials", *COES Graduate Student Conference,* Ruston, LA, October 27 (2011).
28. M. H. Alsaleh and D. A. Genov, "Semiconductor Based Electromagnetic Metamaterials", *COES Graduate Student Conference,* Ruston, LA, October 27 (2011).
29. V. K. Pappakrishnan, R. K. Vinnakota, A. Khaliq, and D. A. Genov, "Surface Plasmon Diode", *COES Graduate Student Conference,* Ruston, LA, October 27 (2011).
30. V. Kumaran and D. A. Genov, "Casimir-Polder Force Reversal with air as intermediate medium using Metamaterials", *Louisiana Academy of Sciences 85th Annual Meeting*, Monroe, LA, February 26 (2011). (Best Paper Award)
31. P. C. Mundru and D. A. Genov, "Analytical Numerical Analysis of a Generic Cloaking System", *American Physical Society (APS) March Meeting,* Dallas, TX, March 21-25, abstract #V32.002 (2011).
32. P. C. Mundru and D. A. Genov, "Design of a Generic Cloaking Device", *Louisiana Academy of Sciences 85th Annual Meeting*, Monroe, LA, February 26 (2011).
33. Desimone, D. G., M. A. Koorie, A. Thapa, S. R. Animilli, S. Zivanovic, and D. A. Genov, "Theoretical and experimental study of metal-dielectric composite electrodes for polymer solar cell enhancement", *Louisiana Academy of Sciences 85th Annual Meeting,* Monroe, LA, February 26 (2011).
34. S. Shepard, A. Kost, D. Genov and S. Zivanovic, "Optical Waveguide Filtering Concentrators for the Enhancement of Polymer Photovoltaic Output Power", *American Solar Energy Society (ASES)* – Raleigh, NC (2010).
35. V. Kumaran and D. A. Genov, "Casimir-Polder Force Reversal using Metamaterials", *77th Annual Meeting of the Southern Section of The American Physical Society,* Baton Rouge, LA, October 20-24 (2010).
36. P. C. Mundru and D. A. Genov, "Generic Design of an Invisivility Device", *77th Annual Meeting of the Southern Section of The American Physical Society,* Baton Rouge, LA, October 20-24 (2010).
37. D. A. Genov, S. Zhang, and X. Zhang, "Electromagnetic Metamaterials Mimic Celestial Phenomenon in the Lab", *Progress in Electromagnetics Research Symposium (PIERS),* Cambridge, MA, July 5-8 (2010) (Invited Talk).
38. D. A. Genov, "Molding the flow of light with Artificial Optical Materials", *Mardi Gras Conference-Computational Materials and methods,* Baton Rouge, Louisiana, February 11-14 (2010) (Invited Talk).

39. D. A. Genov, and S. Selmic "Surface Plasmon Enhanced Solar Cell", *Louisiana Tech Energy Systems Conference*, Shreveport, Louisiana, November 5 (2009) (Invited Talk).
40. D. A. Genov, S. Zhang, and X. Zhang, "Electromagnetic Properties of Complex Metamaterials: from Near Field Imaging with Super Resolution to Mimicking Celestial Phenomenon in the Lab", *Progress in Electromagnetic Research Symposium* (PIERS), Moscow, Russia, August 18-21 (2009).
41. H. Liu, D. A. Genov, T. Li, S.M. Wang, F.M. Wang, S.N. Zhu, and X. Zhang', "Optical Activity Introduced by Magnetic Plasmon Resonance in Metamaterial", *Progress In Electromagnetic Research Symposium* (PIERS), Hangzhou, China, March 24-28, (2008).
42. D. A. Genov, K. Seal, A. K. Sarychev, V. M. Shalaev, X. Zhang, and H. Cao, "The exciting world of surface plasmons - order vs. chaos", Optics & Photonics, *SPIE 52st Annual Meeting*, San Diego, California, August 26-30 (2007). (Invited talk)
43. R. F. Oulton, D. A. Genov, D. F. P. Pile, V. Sorger, M. S. Ambati, X. Zhang, " Competition of surface plasmon modes for dipole emission in optically active plasmonic nano-films", *SPIE Optics& Photonics Meeting*, San Diego, CA, USA, August 26-30, 2007 (paper 6641-48).
44. V. Sorger, , R. F. Oulton, S. Han, Z. Liu, D. F. P. Pile, D. A. Genov, C. Sun, X. Zhang, "Experimental study and analysis of passive plasmonic nano-cavities", *SPIE Optics& Photonics Meeting*, San Diego, CA, USA, August 26-30, 2007 (paper 6641-60).
45. D. A. Genov, "The exiting world of surface plasmons: order vs. chaos", *SPIE Optics& Photonics Meeting*, San Diego, CA, USA, August 26-30, 2007 (Invited paper 6647-02).
46. Y. M. Liu, D. A. Genov, C. Sun, X. Zhang, "All angle negative refraction with metamaterial", *Annual APS March Meeting*, Denver, CO, March, 5-9, 2007 (paper U14.00012).
47. D. A. Genov, H. Liu, D. M. Wu, Y. M. Liu, J. M. Steele, C. Sun, S. N. Zhu, X. Zhang', "Subwavelength Magnetic Plasmon Waveguides", to be presented at the *Annual APS March Meeting*, Denver, CO, March, 5-9, 2007 (paper U14.00012).
48. D. A. Genov, M. S. Ambati, and X. Zhang, "Generic Theory of Surface Plasmon Polaritons at Active or Passive Metal-Dielectric Interfaces", *Annual APS March Meeting*, Denver, CO, March, 5-9, 2007 (paper U43.00010).
49. M. S. Ambati, D. A. Genov, D. Wu, J. Yao, C. Sun, and X. Zhang, "Surface plasmon amplification in planar metal films", Optics & Photonics, *SPIE 51st Annual Meeting*, San Diego, California, 13-17 August, paper 6323-78, (2006).
50. D. A. Genov, K. Seal, A. K. Sarychev, V. M. Shalaev, H. Cao, and X. Zhang, "Chaotic Nature of Surface Plasmons States in Inhomogeneous Media", ETOPIM7, Sydney, Australia, Jul 9-14 (2006).
51. D. A. Genov, M. Ambati, and X. Zhang, "Analytical treatment of surface waves propagation at the interfaces between metal and an active media", *Seventh International Conference on the Electrical Transport and Optical Properties of Inhomogeneous Media* (ETOPIM7), Sydney, Australia, Jul 9-14 (2006).
52. D. A. Genov, K. Seal, A. K. Sarychev, H. Noh, V. M. Shalaev, Z. C. Ying, H. Cao, and X. Zhang, "Localization-delocalization transition in metal-dielectric films: theoretical study and experimental validation", *Gordon Research Conference*, Keene State College, Keene, NH, USA, Jul 23-28, (2006).
53. J. Solas, D. A. Genov, H. Fernández, R. del Coso, J. Gonzalo, V. M. Shalaev , and C. N. Afonso, "Non-linear optical properties of high metal volume fraction Cu:Al_2O_3 and Au:Al_2O_3 metal-dielectric nanocomposites", *Second International Conference in Surface Plasmon Photonics*, Graz, Austria, May 21-26, (2005).
54. V. M. Shalaev,V. P. Drachev, A. Wei, A. K. Sarychev, E. N. Khaliullin, M. Toreson, and D. A. Genov , "SERS sensing with plasmonic nanoantennae", *SPIE 49th Annual Meeting*, Denver, Colorado, USA, August 2-6, 2004 (invited paper 5513-24).

55. D. A. Genov, A. K. Sarychev and V. M. Shalaev, "Plasmon Localization and Local Field Distribution in Metal-Dielectric Films", *Annual APS March Meeting*, Austin, TX, USA, March 3-7, 2003 (paper J1.201).
56. D. A. Genov, A. Wei , A. K. Sarychev and V. M. Shalaev, "Surface-enhanced Raman scattering in periodic and semi-periodic metal-dielectric films", *Annual APS March Meeting*, Austin, TX, USA, March 3-7, 2003 (paper N27.007).
57. D. A. Genov, A. K. Sarychev and V. M. Shalaev, "Short range correlations and localization-delocalization transition in metal-dielectric films", *OSA Annual Meeting*, Orlando, FL, USA, September 29 - October 3, paper MT42, (2002).
58. K. Seal, M. A. Nelson, Z. C. Ying, D. A. Genov, V. M. Shalaev, "Metal coverage dependence of the local optical properties of semicontinuous metallic films", *SPIE 48th Annual Meeting*, Seattle, WA, USA, 7-11 July 2002 (paper 4810-22).
59. V. Yordanov, D. A. Genov, I. Ivanova–Stanik and A. B. Blagoev, "Ignition in Dense Plasma Focus devices - a stochastic model", *34 EGAS Conference*, Sofia, Bulgaria, 9-12 July, 2002, (Book of abstracts p. 405).
60. D. A. Genov, A. K. Sarychev, and V. M. Shalaev, "Metal-dielectric composites: Local-field distribution function and high-order field moments", *Sixth International Conference on the Electrical Transport and Optical Properties of Inhomogeneous Media* (ETOPIM6), Salt Lake City, Utah, USA, July 15-19, 2002 (Book of Abstracts p. 56).
61. D. A. Genov and V. M. Shalaev, "Local Field Distribution in Metal-Dielectric Composites", *NATO Industrial Relationship Workshop2002*, School of Electrical Engineering, Purdue University, IN, March 7-8, 2002 (poster presentation).
62. D. A. Genov, A. K. Sarychev and V. M. Shalaev, "Metal-dielectric composites: Local-field distribution function", *Annual APS March Meeting*, Indianapolis, IN, March 18-22, 2002 (paper F28.013).
63. V. Yordanov, D. A. Genov, I. Ivanova–Stanik and A. Blagoev, "Ignition in Dense Plasma Focus devices - a stochastic model", *Second International School Plasma Diagnostics and Technology*, Kudowa Zdroj, Poland, June 4-8, (2002).
64. V. Iordanov, D. Guenov, I.M. Ivanova-Stanik and A. Blagoev, "Ignition in dense plasma focus devices a stochastic model" 34th EGAS, Sofia, July 2002, Abstracts, P2 -80.
65. K. Seal, Mark A. Nelson, Z. C. Ying, D. A. Genov, A. K. Sarychev and V. M. Shalaev, "Morphology, Optical and Electrical Properties of Semicontinuous Metallic Films", *Four Corners Annual APS Meeting*, Salt Lake City, Utah, October 4-5, 2002 (paper BA.002)
66. D. A. Genov, A. K. Sarychev and V. M. Shalaev, "Local Field Distribution Function and High Order Field Moments for metal-dielectric composites", *Four Corner Annual APS Meeting*, Las Cruces, NM, November 2-3, 2001 (paper EC.007).
67. D. A. Guenov, A. B. Blagoev and I. Ivanova–Stanik, "Monte Carlo simulations of the breakdown phase for the dense plasma focus devices", *PLASMA-2001, International Symposium: Research and Application of Plasmas*, Warsaw, Poland, 19-21 September, 2001 (Book of abstracts, p.69).

Sponsored Research and Patents

Research Grants (Total Awards $1.21M):

1. Proposal Title: "Collaborative Research: Plasmotronics – terahertz optoelectronics through active control of surface plasmons at degenerated semiconductor junctions", funded by the NSF (ECCS-1610200): Total award amount: $398,900 (PI). Period covered: 09/16-08/19.

2. Proposal Title: "Track-1: Louisiana Consortium for Innovation in Manufacturing and Materials", funded by the NSF (NSF(2015-20)-RII-LA Tech): Total LA Tech award amount: $4M (Personal Award share $350,500). Period covered: 07/15-06/20.
3. Proposal Title: "Electromagnetic metamaterials based on diluted metal nanoparticle composites", funded by the Board of Regents/Supervised Undergraduate Research Experience (BoR/SURE) (LEQSF-EPS(2015)-SURE-145): Award amount: $4500 (PI). Period covered: 01/15-12/15.
4. Proposal Title: "Surface Plasmon Polariton Diode: Toward THz Optoelectronics", funded by AFRL Minority Program (LATEC13S57601902C2): Award amount: $50,000 (PI). Period covered: 10/12-11/13.
5. Proposal Title: "High Efficiency Solar Panel", funded by the "EDA I6 Challenge: Louisiana Tech Proof of Concept Center", Economic Development Administration (EDA). Award amount: $110,232 (PI). Period covered: 09/2011-12/2013.
6. Proposal Title: "Artificial optical materials for molding the flow of light", funded by Louisiana Board of Regents Support Fund – RCS (LEQSF(2011-14)-RD-A-18). Award amount: $131,433 (PI). Period covered: 07/11-07/14.
7. Proposal Title: "Enhancement of the Upper Level Physics Laboratories at Louisiana Tech University", Louisiana Board of Regents Support Fund (BoRSF) – Enhancement. Award amount: $62,943 (co-PI). Period covered: 06/11-06/12.
8. Proposal Title: "Optical Attractors and Continuous Index Photon Traps", Louisiana EPSCoR (PFUND FY2009-10). Award amount: $10,000 (PI), Period covered: 01/2010-12/2010.
9. Proposal Title: "Surface Plasma Enhanced Solar Cell (SPESC)", Louisiana Tech Award (DOE RFP 32-4001-56176). Award amount: $99,689 (PI). Period covered: 09/09-12/10.

Reports of Invention

1. D. A. Genov, S. Zivanovic, S. Animilli, M. A. Koorie, A. Thapa, "Semi-continuous metal dielectric composite for optoelectronic devices," patent filed on February 27, 2013, Serial Number: 13777856, Louisiana Tech University, Ruston, Louisiana.

Professional Development

- *2011 CAREER Award Regional Forum*, Baton Rouge, November 8-9 (2011).
- *The LONI Institute All-Hands Meeting*, Baton Rouge, LA, February 10, 2010.
- *The LONI HPC Workshop*, Louisiana Tech University, Ruston, LA, October 7, 2009.
- *The LONI Institute All-Hands Meeting*, Baton Rouge, LA, October 31, 2008.

Service

Service to Profession

- **Editorial Board Member:**
  - ✓ Dataset Papers in Optics (2012-present)
  - ✓ Scientific Report, Nature Publishing Group (2015-present)

- **Panel Member on State/Federal/Private/International Funding Agencies:**

- ✓ National Science Foundation (NSF); Division of Materials Research (DMR), Electronic and Photonic Materials Program (EPM).
- ✓ National Science Foundation (NSF); Directorate for Engineering (ENG), Electrical, Communications and Cyber Systems (ECCS), Computational and Data-Enabled Science and Engineering (CDS&E).

- **Remote Reviewer for State/Federal/Private/International Funding Agencies:**
  - ✓ National Science Foundation (NSF): Division of Materials Research (DMR), Electronic and Photonic Materials Program (EPM).
  - ✓ Department of Energy (DOE); Office of Science Graduate Fellowship (SCGF) Program's.
  - ✓ European Research Council Executive Agency; Physical Science and Engineering, Systems and Communication Engineering.

- **Conference Committee Member:**
  - ✓ *QELS – Fundamental Science 03: Metamaterials and Complex Media*, *CLEO Conference in San Jose* (10-15 May, 2015, and 5-10 Jun, 2016)
  - ✓ *USNC-URSI National Radio Science Meeting, University of Colorado at Boulder* (January 4-7, 2012).
  - ✓ *Nano-Structured Thin Films II, SPIE Annual Optics & Photonics Meeting, San Diego* (August 2-6, 2009).
  - ✓ *Nano-Structured Thin Films Conference, SPIE Annual Optics & Photonics Meeting in San Diego* (August 10-15, 2008).
  - ✓ *Nano-Coatings Conference, SPIE Annual Optics & Photonics Meeting, San Diego* (August 26-30, 2007).

- **Reviewer for Professional Journals:** *Nature, Nature Photonics, Nature – Light: Science & Applications, Physical Review Letters, Applied Physics Letters, Physical Review A, B, E and X, Nano Letters, Optics Express, Optics Letters, Physics Letters A, Journal of Physics D, Applied Physics A – Special Issue on Metamaterials, Applied Physics B - Lasers and Optics, Optics Communications, Journal of the Optical Society of America B* (*JOSA B*), *Scientific Reports, Optical Materials Express, MRS Communications*, *European Physical Journal D* (*EPJD*) , *Journal of Physics: Condensed Matter* (*JPCM*), *Science and Technology of Advanced Materials.*

- **Physics Textbook Reviewer:**
  - ✓ Matthew N. O. Sadiku, *Elements of Electromagnetics (Oxford Series in Electrical and Computer Engineering),* 5th edition, Oxford University Press (2010).
  - ✓ Steven Chapra and Raymond Canale, *Numerical Methods*, 7th edition, McGraw-Hill Science-Engineering-Math (2014).
  - ✓ Randall D. Knight, Brian Jones and Stuart Field, *College Physics*: *A Strategic Approach*, 3rd edition, Pearson (2015).

<u>Service to University, College and Academic Program</u>

- **Director of the Center for Applied Physics Studies (2014-present)**

- **La Tech Annual Leadership Initiative Awards Committee Member (2013).**

- **Elected University Senate Member (2012-2015)**
- **Engineering Physics Qualifier Examination Committee Member (2009-present).**
- **Physics Faculty Search Team (2011-2012, 2015-2016).**
- **LONI and LA-SiGMA colloquium series administrator (2011).**
- **LONI Institute Graduate Fellowship Committee (2009, 2010).**
- **Academic Advisor for all Physics and Engineering Double Majors (2009, present).**
- **Graduate Students Research Advisor:** Mona Alsaleh (PhD candidate), Rajkumar Vinnakota (PhD candidate), Neal Blackman (PhD candidate).
- **Undergraduate Students Research Advisor:** Hieu Nguyen ("Quantum size effects in metal nanoparticle particle composites", Supervised Undergraduate Research), Caylin Colson ("Electromagnetic metamaterials based on diluted nanoparticle composites", Supervised Undergraduate Research Experience (SURE) in Physics, Digesh Raut ("Optical Paths in an Inhomogeneous medium", Senior Design Project, BS. Degree in Physics), Kush Patel ("Surface Plasmon Enhanced Solar Cell", VETS Senior Design Project, BS. Degree in Electrical Engineering), Lav Patel (Surface Plasmon Enhanced Solar Cell, VETS Senior Design, BS. Degree in Electrical Engineering), Suraj Gyawali ("Surface Plasmon Enhanced Solar Cell", Senior Design Project, BS. Degree in Electrical Engineering), Nicholas K. Rader ("The Treatment of Cancer Using Nanoparticles", REU Program), John Rollo ("Fast relaxation method for simulation of the AC response of large RLC networks", BS. Degree in Physics), Aawaz Shrestha ("Successive over relaxation method for fast simulations of the metal-dielectric phase transition in nanoscale composite materials", BS. Degree in Mechanical Engineering), Gavin Richard ("Surface Plasmon Polariton Diode: Toward THz Optoelectronics", AFRL Minority Leaders Program), and Antonio Smith ("Surface Plasmon Polariton Diode: Toward THz Optoelectronics", AFRL Minority Leaders Program).
- **Former Students:** Ashish Sharma (former PhD, currently a New Process Technology Development Engineer, Intel Corporation), Brandon Touchet (former PhD student), Pattabhiraju Mundru (former PhD. student currently an Assistant Professor in Physics, Eastern New Mexico University), Venkatesh Kumaran (former PhD. student currently a Data Scientist/Statistician at Green Charge Networks, LLC, Santa Clara, CA), Shravan Rakesh Animilli (former PhD student, currently), David C. Hertlein (Physics Engineer, Ion Beam Applications, Seattle, WA). Gavin Richard (University of California at Riverside), Amani Alharthi (MS. in Physics, currently in Saudi Arabia), Antonio Smith.
- **Committee Member:** James Solow (PhD., advisor Dr. Songmin Hou), Taylor Tarlton (PhD., advisor Dr. P. Derosa), Mark A. Koorie (M.S., advisor Dr. S. Zivanovic), Anil Thapa (M.S., advisor Dr. S. Zivanovic), Anjana Paudyal (M.S., advisor Dr. P. Derosa), Vishwa P. Podduturi (PhD., advisor Dr. P. Derosa), Steven D. Baker (PhD., advisor Dr. P. Derosa), Manal M. Abuhasirah (M.S., advisor Dr. K. Grimm), Richard T. Chevious (M.S., advisor Dr. J. Shaw), David N. Groden (M.S., advisor Dr. T. Dobbins), Purnima Kharidehal (PhD., advisor Dr. D. Mainardi), Prajon R Shakya

(M.S., advisor Dr. D. Davis), Anjana Paudyal (M.S., advisor Dr. P. Derosa), Lane Elien (PhD., advisor Dr. A. Jaganathan), Andrew Stroud (M.S., advisor Dr. P. Derosa), Prajon R Shakya (Master of Science, advisor Dr. D. Davis), and Justin Melancon (M.S., advisor Dr. S. Zivanovic).

Teaching Undergraduate Courses

- **Physics Courses**
  - ✓ PHYS202 – PHYSICS FOR ENGR AND SCI II
  - ✓ PHYS205 – CONCEPTUAL PHYSICS I
  - ✓ PHYS210 – GENERAL PHYSICS II
  - ✓ PHYS406 – ELECTRICITY & MAGNETISM I
  - ✓ PHYS407 – ELECTRICITY & MAGNETISM II
  - ✓ PHYS408 – ELECTRICITY & MAGNETISM LAB I (I have developed this Laboratory)
  - ✓ PHYS409 – ELECTRICITY & MAGNETISM LAB II (I have developed this Laboratory)
  - ✓ PHYS412 – INTO TO SOLID STATE PHYSICS
  - ✓ PHYS470C – ADVANCED QUANTUM MECHANICS
  - ✓ PHYS470C – COMP METH PHYS
  - ✓ PHYS470C – OPTICS

- **Electrical Engineering Courses**
  - ✓ ELEN411 – ELECTRIC & MAGNETIC FIELDS

- **Chemistry Courses**
  - ✓ CHEM450C – SOLID STATE CHEMISTRY

Teaching Graduate Courses

- **Physics Courses**
  - ✓ PHYS503C – TOPICS IN PHYSICS
  - ✓ PHYS511 – ELECTROMAGNETIC THEORY
  - ✓ PHYS512 – SOLID STATE PHYSICS
  - ✓ PHYS522 – QUANTUM MECHANICS
  - ✓ PHYS540 – COMP METH PHYS MODEL&SIMULAT I

- **Electrical Engineering Courses**
  - ✓ ENGR592 – ENGR COMPUTATIONAL METHODS
  - ✓ ELEN512 – ELECTROMAGNETIC WAVES

K12 Education

- **Speaking of Science Traveling Lecturer**
  - ✓ H.L. Bourgeois School at Gray, LA (presented three lectures/seminars to 94, ninth and tenth graders) (January 22nd, 2016).
  - ✓ Young Engineers Society at Lake Charles, LA (presented a talk to 17 sixth graders) (February 16th, 2016).
  - ✓ Our Lady Queen of Heaven School at Lake Charles, LA (presented a talk to 22 sixth graders) (February 25th, 2016).

- ✓ AP Summer Institutes and Workshops at Baton Rouge, LA (presented a seminar to sixth through eighth grade teachers) (June 23th, 2016).
- ✓ AP Summer Institutes and Workshops at the University of Lafayette, LA (presented a seminar to sixth through tenth grade teachers) (July 18th, 2016).