IVAN I. SMALYUKH
Curriculum Vitae

CONTACT INFORMATION

University of Colorado at Boulder
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http://spot.colorado.edu/~smalyukh/
http://spot.colorado.edu/~smalyukh/Lab/

APPOINTMENTS

2009-present Tenure Track Assistant Professor and a Fellow of the Renewable & Sustainable Energy Institute (RASEI), University of Colorado at Boulder, Boulder, CO 80309

2007-present Assistant Professor, Department of Physics and Liquid Crystal Materials Research Center, University of Colorado at Boulder, Boulder, CO 80309

PAST PROFESIONAL EXPERIENCE

2006-2007:	ICAM RESEARCH ASSOCIATE	Univ. of Illinois, Urbana-Champaign
2005-2006:	Postdoctoral RESEARCH ASSOCIATE	Liquid Crystal Inst., Kent State Univ.
2004-2005:	POSTDOCTORAL RESEARCHER	AlphaMicron Inc., Liq. Cryst. Inst., KSU

EDUCATION

2003:	PhD - CHEMICAL PHYSICS	Kent State University, Ohio
1999:	Candidate of Sciences	Institute for Physical Optics, Lviv, Ukraine
1994, 1995:	BS, MS - PHYSICS	Lviv Polytechnic National University, Ukraine

HONORS

Awards and fellowships

- Selected for the National Academy of Sciences Kavli Frontiers of Science Symposium, 2011
- 2010 Presidential Early Career Award for Scientists and Engineers (PECASE), *Office of Science and Technology Policy, the White House:* http://www.whitehouse.gov/administration/eop/ostp/pressroom/11052010
- 2010 Sigma Pi Sigma Favorite Professor selected by CU Physics Sigma Pi Sigma Student Chapter
- 2009 Selected as a Founding Fellow of RASEI
- 2009 University of Colorado Energy Initiative Seed Grant award
- 2009 NSF CAREER Award
- 2008 Colorado Junior Faculty Development Award (JFDA)
- 2008 NSF-DARPA Photonics Technology Access Program award
- 2008 University of Colorado Innovation Seed Grant award
- 2008 Liquid Crystal Materials Research Center Senior Investigator
- 2008 ICAM fellowship (mentor-driven)

- 2007 International Institute for Complex Adaptive Matter (I2CAM) Grant
- 2006 Glenn H. Brown Prize, International Liquid Crystal Society
- 2004-2006 ICAM (Institute for Complex and Adaptive Matter) two-year Fellowship
- 2006 SPIE Grant (as a Secretary of the Great Lakes SPIE Chapter)
- Conference organization grant from I2CAM for "Liquid Crystal Technology and Applications", 2006
- 2005 Travel Fellowship of International Institute for Complex and Adaptive Matter (I2CAM)
- 2005 UNESCO "Bio-image" Grant and travel Fellowship to participate in a summer school
- 2005 SPIE Grant (as a Secretary of the Great Lakes SPIE Chapter)
- The 2003 SPIE Educational Scholarship in Optical Science and Engineering
- 2002 & 2003 conference participation grants of the American Physical Society for the conferences "Opportunities in Biology for Physicists"
- The International Liquid Crystal Society 2002 MultiMedia Award
- The 2002 SPIE Educational Scholarship in Optical Science and Engineering
- The 2002 Microscopy Society of America - Royal Microscopical Society Scholarship
- 2001 David B. Smith Fellowship (Kent State University)
- 2001 Focus on Microscopy Focus on Microscopy Travel Scholarship
- 1998 International Science Foundation (G. Soros) Award recognizing outstanding research

Professional achievements and service

- Organizer of the annual inter-continental advanced materials for photonics (I-CAMP) summer schools: http://icamconferences.org/i-camp.html;
- Co-Chair, Planer-Smoluchowski Soft Matter Workshop on Liquid Crystal Colloids: http://www.icmp.lviv.ua/pssm2011/
- Chair of the Metamaterials Workshop in Hangzhou, China, April, 2011: http://icamconferences.org/metamaterial/
- Chair of the I-CAMP'11 School, Argentina-Uruguay, May 28-June 17, 2011: http://icamconferences.org/i-camp2011/
- Chair of the I-CAMP 2010 summer school in Australia, June 20-July 10, 2010: http://icamconferences.org/i-camp2010/;
- Chair of the CIMOPV workshop in Brisbane, Australia, July 1-3, 2010: http://icamconferences.org/cimopv/index.html
- Chair of the Inter-continental advanced materials for photonics I-CAMP'09 held in China, June 28-July 19: http://icamconferences.org/i-camp/
- Chair of the Planer-Smoluchowski Soft Matter Workshop PSSM-2009: http://www.icmp.lviv.ua/statphys2009/pssm/
- Chair of the LC2CAM conference (together with N. Clark), August 6-10, 2008; web page: http://icam-i2cam.org/conference/lc2cam08/
- Program/organizing Committee member for the annual "Emerging Liquid Crystal Technologies" Conference at the annual Photonics West symposia, San Francisco, CA
- Organizer and local coordinator of the CU-Boulder Branch of the International Institute for complex Adaptive Matter (ICAM-I2CAM), http://icam-i2cam.org/
- Editorial Board Member of the international journal "Advances in Condensed Matter Physics": http://www.hindawi.com/journals/acmp/editors.html
- Advisor of the Univ. of Colorado SPIE student chapter, http://www.colorado.edu/studentgroups/spie/
- Advisor, Univ. of Colorado MRS student Chapter http://www.mrs.org/s_mrs/doc.asp?CID=1662&DID=141116
- Referee for Science, Nature, Procs. Natl. Acad. Sci. USA, Physical Review Letters, Physical Review E, Physics Letters A, Applied Optics, J. Phys.: Cond. Matter, Nanoscale Research Letters, Europhys. Lett., European Phys. J. E, Nanotechnology, J. Mol. Liquids, Soft Matter, PLoS One, JSTAT, ACS

Nano, Mol.Cryst.Liq.Cryst., J. of Selected Topics in Quantum Electronics, Advances in Cond. Matter Physics, Opto-Electronics Review, Sensors & Actuators B, Electrocemical and Solid State Letters (ESTL), J. Nanoscience Lett., and Langmuir.

- Chair of the Soft Matter Oversight Committee of the Intl. Institute for Complex Adaptive Matter
- Instructor of the SPIE conference short courses (such as SC790 short course) on Liquid Crystals
- Member of the SPIE Regional Chapter Task Force Committee
- Instructor for the SPIE Traveling Lecturer Outreach Program ;
- Member of the Board of Governors of the International Institute for Complex Adaptive Matter (ICAM-I2CAM, http://www.i2cam.org/)
- Chair of the "Liquid Crystal Technology and Applications" conference, Dayton, June 12-16, 2006
- Member of the SPIE Scholarships and Grants Committee
- Program Committee member, Conference GL06-108, "Nano- and Microphotonics: Materials, Devices, Processing, and Applications," 13-15 June 2006.
- Chair of the "Liquid Crystals in optics and Photonics" conference, Kent, OH, October 27-28, 2005
- Organizer of the Outreach Day, Science Tours for high school students, and Career Workshop, Western Reserve Academy and Kent State Univ., OH, October 26-28, 2005
- Organizing Committee member, Great Lakes Photonics Symposium GLPS2006, Dayton, OH, June 12-16, 2006

News and highlight articles about our research

- Ingo Dierking, "Editor's Interview with Ivan Smalyukh", Liq. Crystals Today (2011).
- Elizabeth Skwiot, "ICAM Members Honored by US President Barack Obama for Their Work": http://icam-i2cam.org/index.php/ICAMnews/detail/icam_members_honored_by_us_president_barack_obama_for_their_work , ICAM news, August 2011
- "PRESIDENT HONORS OUTSTANDING EARLY-CAREER SCIENTISTS", White House Press Release, November 5, 2010: http://www.whitehouse.gov/administration/eop/ostp/pressroom/11052010
- D. J. Broer, "Defects dictated," *Nature Materials* **9**, 99-100 (2010): a News and Views article about our paper published in the same issue [*Nature Materials* **9**, 139-145 (2010)].
- Narture Materials highlight [Nature Materials 9, 2 (2010).] about our article [C. Lapointe, T. Mason, and I.I. Smalyukh, *Science* **326**, 1083-1086 (2009)].
- Nature Photonics highlight [*Nature Photonics* **4**, 66 (2010)] about our article I.I. Smalyukh *et al.*, *Nature Materials* **9**, 139-145 (2010).
- "I-CAMP 09 tours China," By Karie Friedman, ICAMNews, October 2009, http://icam-i2cam.org/icamnews/?p=303
- Our paper on alignment of bacteria is featured in the Virtual Journal of Biological Physics Research.
- Nature Photonics, October 2008 issue, article by Rachel P.C. Won about the LC2CAM workshop in Boulder organized by Ivan Smalyukh: "View from LC2CAM: Flowing Crystals Glow".
- An article "Workshop on Light-Controlled Liquid Crystals Provides Shining Example" by By Karie Friedman, ICAMNews, October 2008 issue: "Workshop on Light-Controlled Liquid Crystals Provides Shining Example".
- Our paper on CARS-PM imaging of LC director structures is featured in the Virtual Journal of Biomedical Optics.
- CARS microscopy textures of liquid crystals from our paper on CARS-PM imaging of LC director structures are featured on the cover page of the latest issue of Optics Express, Volume 16, issue 14
- Our paper on laser manipulation of defects is featured on the cover of Optics Express, Volume 15, issue 7
- Research highlights on the web page of ICAM: http://www.icam-i2cam.org/?page_id=7
- Cover page of the Physical Review Letters, Volume 96, issue 17; image of a liquid crystalline pattern formed by DNA from our article

- I.I. Smalyukh et al., Phys. Rev. Lett. 96, 177801 (2006) was featured by Bioinfo-online
- I.I. Smalyukh et al., Phys. Rev. Lett. 96, 177801 (2006) was featured by ScienceDaily
- I.I. Smalyukh et al., Phys. Rev. Lett. 96, 177801 (2006) was featured by Medical News Today
- I.I. Smalyukh et al., Phys. Rev. Lett. 96, 177801 (2006) was featured by WordPress.com
- I.I. Smalyukh et al., Phys. Rev. Lett. 96, 177801 (2006) was featured by EurekAlert
- I.I. Smalyukh et al., Phys. Rev. Lett. 95, 157801 (2005) was featured by the V.J. of Nanoscale Science and Technology, Vol. 12, Issue 16 (2005)
- I.I. Smalyukh and O.D. Lavrentovich, Phys. Rev. Let. 90, 085503 (2003) was featured by the V.J. of Biophysical Research, Vol. 5, Issue 5 (2003)
- I.I. Smalyukh and O.D. Lavrentovich, Phys. Rev. E 66, 051703 (2002) was featured by the V.J. of Biophysical Research, Volume 4, Issue 10 (2002)
- Phillip Espinasse, Liquid Crystal Imaging goes 3D, OE Magazine, May 2003, Page 6.
- Patricia E. Cladis, Angew. Chem. Int. Ed., A hard look at Soft Matter, 41 (18), 3505 (2002); see also Angew. Chem. 114 (18), 3655 (2002)
- Ingo Dierking, Fluorescence Confocal Polarizing Microscopy: Imaging Liquid Crystal Director Fields in Three Dimensions, CHEMPHYSCHEM 2, 663-664 (2001)

RESEARCH INTERESTS AND EXPERTISE

·nano-structured materials and their applications; ·molecular & colloidal self-organization for renewable energy applications; · organic photovoltaics; · columnar liquid crystalline semiconductors; ·study of soft condensed matter & biomolecular materials by optical techniques; · novel approaches for light harvesting; ·structure, electro-optics, & applications of liquid crystals; ·laser trapping & manipulation; ·structure & dynamics of colloidal suspensions ·confocal, near-field, multi-photon fluorescence, & CARS microscopy; ·topological defects; ·nanophotonics & plasmonics; ·liquid crystal phases of DNA and F-actin

LECTURING

Conference Short Courses

- Short Course SC790 “Liquid Crystals: from fundamentals to applications”, offered at the SPIE conferences and symposia (at least two times a year at SPIE Annual Meeting &Photonics West);
- Short Course “Liquid Crystals” co-located with the “Nanophotonics” conference of the Optical Society of America, June 2007, Zhejiang University, Hangzhou, China
- Short Course “Liquid Crystals” co-located with the LCOPV workshop, August 7-10, 2010, Univ. Colorado at Boulder, USA

Plenary and invited conference presentations

- Gordon Research Conference on Liquid Crystals, Mount Holyoke College, South Hadley, MA, June 19-24, 2011
- Inter-Continental Advanced Materials for Photonics 2011 (I-CAMP’11) Summer School, Montevideo - Buenos Aires – Corrientes, May 28-June 17, 2011.
- Metamaterials Workshop, Hangzhou, China, April 9-12, 2011
- Photonics West Symposium of the International Society for Optical Engineering, Conference “Emerging Liquid Crystal Technologies”, January 22-27, 2011, San Francisco, USA
- Materials Research Society Fall Meeting, November 29 - December 3, 2010, Boston, USA
- Conference on Optical Trapping & Optical Micromanipulation (OTOM), San Diego, California, USA, August 1-5, 2010

- Fourth International Conference on Electroactive Polymers: Materials and Devices, November 21-26, 2010, Surajkund (India)
- 23rd International Liquid Crystal Conference ICLC2010, July 11-16, 2010, Krakow, Poland (**plenary**) http://www.ilcc2010.uj.edu.pl/
- SPIE Liquid Crystal conference XIV, part of the SPIE Annual Meeting "Optics & Photonics," August 1-4, 2010, San Diego, California, USA
- Conference "Confined Liquid Crystals: Landmarks and Perspectives", Ljubljana, Slovenia, July 19-20, 2010, (http://clc.fmf.uni-lj.si/)
- I-CAMP'10 Summer School, June 19-July 10, Sydney-Brisbane, Australia: http://icamconferences.org/i-camp2010/
- "Emerging liquid crystal technologies," Photonic West, Jan 23-28, 2010, San Francisco, CA
- I-CAMP'09 Summer School, Hangzhou-Shanghai-Qingdao-Beijing, China, June 28-July 19, 2009
- LC Microsymposium, SIAM meeting "Mathematical Aspects of Materials Science," May 11-14,2008
- Conference "Emerging liquid crystal technologies," Photonic West, Jan 20-25, 2009, San Jose, CA
- Conference "Nanophotonics" of the Optical Society of America, June 17-22, 2007, Hangzhou, China
- Conference "Emerging liquid crystal technologies," Photonic West, Jan 20-25, 2007, San Jose, CA
- 21st International Liquid Crystal Conference, ICLC2006, July 2-6, 2006, Keystone, CO (**plenary**)
- 19th International Liquid Crystal Conference, ICLC2002, 30 June – 5 July, Edinburgh, UK, as the winner of the 2002 International Liquid Crystal Society Multimedia Prize
- Light and Optics in Biomedicine 2002 (LOB2002), October 23-24, 2002, Warsaw, Poland

Invited Colloquia and Seminars

- OEQS Seminar, University of Colorado at Boulder, "Optical manipulation and nonlinear optical imaging of liquid crystals," Boulder, Colorado, March 18, 2011.
- Air Force Research Laboratory, Wright Patterson Research Laboratory, "Tunable self-assembly and self-alignment of anisotropic plasmonic nanoparticles in liquid crystals," February 18, 2011.
- Johns Hopkins University, Condensed Matter Seminar, "Light-directed self-assembly of colloids and localized particle-like structures in chiral nematic liquid crystals," February 16, 2011.
- Rice University, Chemical Engineering Department Seminar "Reconfigurable structural self-assembly and self-alignment of anisotropic nanoparticles in liquid crystals," February 10, 2011
- Physics Colloquium at the Colorado School of Mines, "Control of colloids and topological defects in liquid crystals by optical phase singularities," January 18, 2011.
- School of Mathematics Seminar, workshop on topology "Control of LC Defects using Optical Phase Singularities", Institute for Advanced Study, Princeton, October 6, 2010, http://math.ias.edu/seminars
- Physics Colloquium "Control of structures and defects in soft condensed matter by use of optical traps with phase singularities", Department of Physics, Denver University, November 3, 2010
- Condensed Matter Seminar, "Assembly and Alignment of Colloidal Particles Mediated by Liquid Crystal Defects and Elasticity", Department of Physics, University of Pennsylvania, September 29, 2010 (http://www.physics.upenn.edu/~cmsem/)
- SPIE Visiting Lecturer Program Lecture "Laser tweezers and optical manipulation," School of Optics, The National Institute of Astrophysics, Optics & Electronics (INAOE), Puebla, Mexico, 2010
- Condensed Matter Seminar "Colloidal Self-Assembly and Self-Alignment in Liquid Crystals", Inst.for Cond. Matter Physics of the Ukrainian Academy of Sciences, Lviv, Ukraine, July 26, 2010.
- SPIE Visiting Lecturer Program Lecture "Seeing in 3D: confocal, two-photon flourescence, and CARS microscopy," Kent State University, Kent, Ohio, October 1, 2010.
- Seminar Lecture "Liquid Crystals of DNA and F-actin biopolymers," Institute of Cell Biology of the National Academy of Sciences of Ukraine, July 22, 2010
- Nonlinear Physics Center Seminar "Towards Reconfigurable Optical Metamaterials: Nanoparticle

Self-Assembly and Self-Alignment in liquid crystals", Department of Physics, The Australian National University, Canberra, Australia, July 9, 2010

- Colloquium "Self-Assembled Optical Metamaterials Based on Liquid Crystals", Institute of Electro-Optical Science and Engineering (EOSE), National Cheng-Kung University (NCKU), Tainan, Taiwan, June 18, 2010
- Condensed Matter Physics Seminar "Optically-induced quasiparticles in confined chiral nematic liquid crystals", University of California at Davis, April 8, 2009
- Physics Colloquium "Contact-free Optical Manipulation of Micro- and Nano-sized Objects Using Holographic Laser Tweezers", CSU-Sacramento, April 9, 2009
- COSI Seminar lecture "Non-contact optical control of multiple defects and structures in liquid crystals using holographic and time-shared optical trapping," Engineering, University of Colorado at Boulder, February 2, 2009
- Saturday Physics Series Seminar "Laser Tweezers & Laser Shapers: Moving things without touching," Dept. of Physics, University of Colorado at Boulder, April 18, 2009
- Physical Chemistry Seminar, "Light-Controlled Liquid Crystals", UCLA, October 20, 2008
- SPIE Visiting Lecturer Program Lecture "Laser tweezers and laser shapers," Department of Physics, Taras Shevchenko National University, Ukraine, December 17, 2008
- Seminar, "Tunable self-organized and optically-generated ordered structures for electro-optic and photonic applications," Department of Applied Physics, Yale University, March 26, 2007.
- Colloquium, "Probing and Controlling Order in Soft Matter," Department of Physics, University of Colorado at Boulder, March 19, 2007.
- Colloquium, "Colloidal self-organization and optical control of structures in ordered biomolecular and soft materials," Department of Physics, Georgetown University, February 22, 2007.
- Seminar, "Artificial and natural order in biological systems: from liquid crystalline patterns of DNA to aligned bacteria," Department of Physics, Iowa State University, February 27, 2007.
- Colloquium, "Non-contact optical control in soft materials: from stretching disclinations to photonic applications," Department of Physics, Syracuse University, February 20, 2007.
- Condensed Matter Physics Seminar, "Elasticity-Mediated Colloidal Interactions and Controlled Self-Assembly in Liquid Crystals," Dept. of Physics, University of Colorado at Boulder, March 20, 2007.
- Seminar, "Self-organized periodic structures in liquid crystalline biomolecular and soft materials," Department of Physics, Clarkson University, Potsdam, NY, April 18, 2007.
- Colloquium, "Probing & Controlling Order in Soft Matter: From Confined Liquid Crystals to Aligned DNA," Department of Physics, Emory University, Atlanta, February 2, 2007.
- Condensed Matter Physics Seminar, "Elasticity-Mediated Colloidal Interactions and Controlled Self-Assembly in Liquid Crystals," Syracuse University, February 21, 2007.
- Seminar, "Self-organized structures in biological systems: from periodic patterns of DNA to aligned bacteria," San Francisco State University, February 5, 2007.
- Seminar, "Polarization-Sensitive Optical Trapping and Imaging of Ordered Structures in Soft Materials," Department of Physics, University of Missouri at Kansas City, January 29, 2007.
- Seminar, "Tunable ordered structures for photonic applications," School of Engineering, University of Dayton, Ohio, April 11, 2007.
- Seminar, "Probing and Controlling Order in Soft and Biomolecular Materials," University of California at Merced, February 7, 2007.
- Seminar, "Colloidal particles in ordered biomolecular & soft materials: from controlled self-organization to optical manipulation," Physics Department, Virginia Commonwealth University, February 16, 2007
- Seminar, "Colloidal self-organization & optical control of structures in ordered biomolecular & soft materials," Department of Physics, Kansas State University, March 1, 2007.

- Colloquium, "Colloidal interactions & controlled self-assembly in ordered soft & biomolecular materials," Department of Physics, Worcester Polytechnic Institute, March 5, 2007.
- Seminar, "Order in biological systems: from liquid crystalline patterns of DNA to aligned bacteria," Department of Physics, Boise State University, March 15, 2007.
- Solid State & Optics Seminar, Dept. of Applied Physics, Yale Univ., New Haven, February 14, 2007.
- Seminar, "Ordered structures and patterns of biopolymers and bacteria," Department of Physics, Florida Atlantic University, March 29, 2007.
- Seminar, "Focused Laser Beams in Liquid Crystals: 3D imaging, trapping, and manipulation," Fordham University, New York, November 9, 2005.
- Seminar, "Quantitative Study of Defects and Colloidal Interactions in Liquid Crystals Using Laser Tweezers and Fluorescence Confocal Polarizing Microscopy," University of Montpellier II, Montpellier, France, July 15, 2005.
- Seminar, "Electric-field-induced nematic-cholesteric transition and 3-D director structures in homeotropic cholesteric cells," AlphaMicron Inc., Kent, OH, January 12, 2005.
- Electro-optics Seminar, "3-D imaging of orientational structures in cholesteric liquid crystals and their electro-optic applications," School of Engineering, Univ. of Dayton, Dayton, OH, April 2, 2004.
- Seminar, "Ordered structures in liquid crystals, anisotropic emulsions and suspensions," Institute for Lasers, Photonics, and Biophotonics, State University of New York at Buffalo, March 12, 2004.

SYNERGISTIC ACTIVITIES

·**CONFERENCE CHAIR** – Annual inter-continental advanced materials for photonics (I-CAMP) summer schools: http://icamconferences.org/i-camp.html; Metamaterials Workshop, Hangzhou, China, April 9-12, 2011: http://icamconferences.org/metamaterial/; I-CAMP 2011 school in Buenos Aires, Argentina & Montevideo, Uruguay, May 28 – June 17, 2011: http://icamconferences.org/i-camp2011/; I-CAMP 2010 summer school in Australia, June 20-July 10, 2010: http://icamconferences.org/i-camp2010/; CIMOPV workshop in Brisbane, Australia, July 1-3, 2010; I-CAMP 2009 summer school in China, June 28-July 19, 2009: http://icamconferences.org/i-camp/); Planer-Smoluchowski Soft Matter Workshop PSSM-2009: http://www.icmp.lviv.ua/statphys2009/pssm/ ; LC Technology & Applications, Dayton, OH, (2006), LC Optics & Photonics, Kent, OH (2005), LC2CAM Intl. Workshop, Boulder, CO (2008), web page: http://i2cam.org/conference/lc2cam08/ ; ·**ORGANIZER** – CU-Boulder Branch of ICAM-I2CAM, Great Lakes Chapter of SPIE & SPIE/OSA student chapters at Kent State Univ. and Univ. of Colorado SPIE student Chapter, Outreach Days at High Schools, Science Tours for School Students, Career Development Workshops for students and postdocs; ·**LEADERSHIP** – CHAIR of the Soft Matter Oversight Committee of the International Institute for Complex Adaptive Matter (I2CAM); SPIE Scholarships & Grants Committee & Chapters Task Force; ICAM-I2CAM Board of Governors & Fellowships Committee; Multiple conference program committees; ICAM Executive Committeee; ·**ADVISOR AND INSTRUCTOR** – Instructor of SPIE & OSA conference short courses (such as SPIE SC790 conference short course) on Liquid Crystals; REU students, students from the CU Summer Multicultural Access to Research Training (SMART) program, Univ. of Colorado MRS and SPIE student Chapters, PhD students and postdocs; · Lecturer of SPIE Traveling Lecturer Program ; ·**EDITORIAL BOARDS** – J. of Nanoscience Letters, Physical Chemistry & Biophysics, International J. "Advances in Cond. Matter Physics."

LANGUAGES

English, Ukrainian, Polish, and Russian

MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS

2000-present American Physical Society (APS) and its Division of Biological Physics

2001-present	International Liquid Crystal Society (ILCS)
2002-present	The International Society for Optical Engineering (SPIE)
2002-present	Optical Society of America (OSA)
2004-present	American Association for the Advancement of Science
2004-present	Institute for Complex Adaptive Matter and International Institute for Complex Adaptive
2006-present	Shevchenko Scientific Society
2007-present	Materials Research Society (MRS)

PUBLICATIONS of Ivan I. Smalyukh

Chapters in books

1. **I.I. Smalyukh (*corresponding author*)** and O.D. Lavrentovich, Defects, surface anchoring, and tree-dimensional director fields in the lamellar structure of cholesteric liquid crystals studied by Fluorescence Confocal Polarizing Microscopy, pp. 205-250, In *Topology in Condensed matter*, M. Monastyrsky (ed.), (Springer, Berlin, 2006).
2. S.V. Shiyanovskii, **I.I. Smalyukh**, and O.D. Lavrentovich, Computer simulations and fluorescence confocal polarizing microscopy of structures in cholesteric liquid crystals, pp.229-270, In *Defects in Liquid Crystals: Computer Simulations, Theory and Experiments*, O.D. Lavrentovich, P. Pasini, C. Zannoni, and S. Zumer (eds.), (NATO Science Series, Kluwer Academic Publishers, 2001).
3. T. Lee, B. Senyuk, R. P. Trivedi, and **I. I. Smalyukh (*corresponding author*)**, Optical microscopy of soft matter systems. In press. In *Soft Matter*, A. Fernandez De Las Nieves (ed.), (Wiley-VCH, 2011). http://arxiv.org/abs/1108.3287

Articles in refereed journals *published*

4. R.P. Trivedi, D. Engström, and **I.I. Smalyukh (*corresponding author, invited review*),** "Optical manipulation of colloids and defect structures in anisotropic liquid crystal fluids", *J. Opt.* **13,** 044001 (2011).
5. **I.I. Smalyukh (*corresponding author*),** Y. Lansac, N. Clark, R. Trivedi, "Three-dimensional structure and multistable optical switching of Triple Twist Toron quasiparticles in anisotropic fluids." *Nature Materials* **9**, 139-145 (2010).
6. C. Lapointe, T. Mason, and **I.I. Smalyukh (*corresponding author*),** "Shape-controlled colloidal interactions in nematic liquid crystals," *Science* **326**, 1083-1086 (2009).
7. **I. I. Smalyukh (*corresponding author*)**, "Liquid crystals enable chemoresponsive reconfigurable colloidal self-assembly", *Proc. Nat. Acad. U.S.A.* **107**, 3945-3946 (2010).
8. Q. Liu, Y. Cui, D. Gardner, X. Li, S. He, & **I.I. Smalyukh (*corresponding author*)**, "Self-Alignment of Plasmonic Gold Nanorods in Reconfigurable Anisotropic Fluids for Tunable Bulk Metamaterial Applications," *Nano Lett.***10**, 1347 (2010).
9. C. P. Lapointe, S. Hopkins, T. G. Mason, and **I.I. Smalyukh (*corresponding author*)**, "Electrically-Driven Multi-axis Rotational Dynamics of Colloidal Platelets in Nematic Liquid Crystals", *Phys. Rev. Lett.* **105**, 178301 (2010).
10. J.S. Evans, C. Beier, and **I.I. Smalyukh (*corresponding author*)**, "Alignment of high-aspect ratio colloidal gold nanoplatelets in nematic liquid crsytals," *J. Appl. Phys.* **110**, 033535 (2011).
11. C.P. Lapointe, T.G. Mason, and **I.I. Smalyukh (*corresponding author*),** "Optical Alignment and Rotation of Trapped Anisotropic Colloids in Nematic Liquid Crystals by Vortex Laser Beams," *Opt. Express* **19,** 18182-18189 (2011).
12. D. Engström, R.P. Trivedi, M. Persson, K.A. Bertness, M. Goksör, and **I.I. Smalyukh (*corresponding author*)**, "Three-dimensional imaging of liquid crystal structures and defects by means of holographic manipulation of colloidal nanowires with faceted sidewalls", *Soft Matter* **7**, 6304-6312 (2011).

13. B. Dan, T. Wingfield, J. Evans, F. Mirri, C. Pint, M. Pasquali, **I.I. Smalyukh (*corresponding author*),** "Spontaneous Ordering of Gold Nanorods on Highly Aligned SWNT Macrostructures", *ACS Appl. Materials & Interfaces*, published online, **dx.doi.org/10.1021/am2009019** (2011).
14. Q. Liu, C. Beier, J. Evans, T. Lee, S. He, and **I.I. Smalyukh (*corresponding author*)**, "Alignment of Rod-like Dye Molecules in Cylindrical Micelles and its Application for Three-Dimensional Imaging of Director Field," *Langmuir* **27**, 7446–7452 (2011).
15. O. Trushkevych, P. Ackerman, W.A. Crossland, and **I.I. Smalyukh (*corresponding author*)**, Optically Generated Adaptive Localized Structures in Confined Chiral Liquid Crystals Doped with Fullerene, *Appl. Phys. Lett.* **97**, 201906 (2010).
16. T. Lee, R.P. Trivedi, & **I.I. Smalyukh (*corresponding author*)**, "Multimodal nonlinear optical polarizing microscopy of long-range molecular order in liquid crystals", *Opt. Lett.* **35**, 3447-3449 (2010).
17. R. Pratibha, W. Park, and **I.I. Smalyukh (*corresponding author*)**, "Colloidal gold nanoparticle dispersions in smectic liquid crystals and thin nanoparticle-decorated smectic films," *J. Appl. Phys.*, **107**, 063511 (2010).
18. R.P. Trivedi, T. Lee, K. Bertness, & **I.I. Smalyukh (*corresponding author*)**, "Three dimensional optical manipulation and structural imaging of soft materials by use of laser tweezers and multimodal nonlinear microscopy," *Opt. Express* **18**, 27658-27669 (2010).
19. D. K. Yoon, R. Deb, E. Körblova, R. Shao, N. V. S. Rao, D. M. Walba, **I. I. Smalyukh**, N. A. Clark, "Organization of Polarization Splay Modulated (B7) Smectic Phases by Confinement in Channels", *Proc. National Acad. Sci. USA* **107**, 21311–21315 (2010).
20. T. Dutta Choudhury, N.V.S. Rao, R. Tenent, J. Blackburn, B. Gregg, and **I. I. Smalyukh**, "Homeotropic alignment and director structures in thin films of triphenylamine based discotic liquid crystals controlled by supporting nanostructured substrates and surface confinement," *J. Phys. Chem. B* **115**, 609–617 (2011).
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