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CHRONOLOGY OF EMPLOYMENT:

- University of Central Florida:
NanoScience Technology Center and CREOL, Assistant Professor, 2011-
- University of Arizona:
College of Optical Sciences, Associate Research Professor, 2008-2011
- University of Arizona:
College of Optical Sciences, Assistant Research Professor, 2005-2008
- University of Arizona:
College of Optical Sciences, Associate Research Scientist, 2003-2005
- University of Arizona:
College of Optical Sciences, Assistant Research Scientist, 2001-2003
- Cochin University of Science and Technology: International School of Photonics,
Research Associate (CSIR), 1996-2000.
- Center for Engineering Studies, Cochin University of Science and Technology,
Adjunct faculty, Engineering Chemistry, 1995-2000.
- Cochin University of Science and Technology:
Research and Teaching Fellow, Department of Chemistry, 1991-1996.

RESEARCH EXPERIENCE:

Assistant Professor

07/2011-present UNIVERSITY OF CENTRAL FLORIDA, NANOSCIENCE TECHNOLOGY CENTER AND CREOL

- Developing energy storing electrical cables
- Designed a new technique to print polymer nanostructures which can be used to fabricate plasmonic structures
- Fabricating nanostructured and light trapping organic solar cells
- Developing new optical limiting devices
- Printing nanostructured electrodes for energy storage devices

Associate Research Professor

07/2008-06/2011 THE UNIVERSITY OF ARIZONA, COLLEGE OF OPTICAL SCIENCES

- Developed new research areas in nanotechnology. This technique is coined “nanomolding” and filed US patent
- Worked on nanoimprinted organic solar cells (US patent application pending).

- Developed nanostructured carbon by nanomolding technique for Li-ion battery and hybrid supercapacitor devices. Resulted in STTR funding.
- Developed nanostructured ceramic structures by printing polysilazane ceramic precursor. Polysilazane precursor was converted to ceramic silicon nitride which is a material of high interest for semiconductor and photonic applications.
- Designed and developed biomolecule (DNA-CTMA) based optical and photonic devices. This work supported by a grant from US Air Force Laboratory.
- Developed nanoparticle based graded index polymer lenses (funded by Canon Inc.)
- Developed new photorefractive polymer materials for holographic 3D display applications which resulted in two *Nature* papers; *Nature* **45**, 694 (2008) and *Cover story, November 4, 2010 issue* and funding from DARPA, ARPA-E, SBIR-Phase II, Air Force). Media report appeared in BBC, NPR, Daily Telegraph, The Economist, National Geographic, New Scientist, Discovery Channel, Physics World, Die Welt, Laser and Photonics Reviews, CNN, Arizona Daily Star, Yahoo, Focus, Nikkei Newspaper, Materials World, Laser Focus World, IEEE Spectrum, Photonics Spectra, The Herald, MIT Technology Review, Science et Vie Junior and several other media around the world.
 - The second *Nature* paper demonstrating 3D Telepresence application using photorefractive polymers and has received worldwide media coverage including *Nature News*, *ABC News*, *BBC News* etc.)
- Research mentor for graduate and undergraduate students
- NSF Research Experiences for Undergraduates (REU) mentor
- NASA-UA fellowship mentor

Assistant Research Professor

04/2005 - 07/2008 THE UNIVERSITY OF ARIZONA, COLLEGE OF OPTICAL SCIENCES

- Developed new polymer composites for photorefractive 3D display applications.
- Designed and developed polymer based nanocomposite infiltrated photonic crystals for band gap tuning.
- Developed carbon nanotube dispersed polymer composite materials for photovoltaic applications.
- Investigated photoisomerism in azobenzenes and nonlinear absorption in fullerene-nanoparticle-polymer composites for optical limiting applications.
- Conducted magneto-optic studies of conducting polymers with high Verdet constant.
- Research mentor for graduate and undergraduate students
- NSF REU mentor

Associate Research Scientist

03/2003 - 03/2005 THE UNIVERSITY OF ARIZONA, COLLEGE OF OPTICAL SCIENCES

- Developed photorefractive polymer composites using a new tetraphenyldiaminobiphenyl (TPD) based conducting polymer (PATPD) with superior performance. Published the first breakthrough paper about this composite (*Adv. Mater.* **16**, 2032 (2004)) which resulted

in AFOSR, DARPA and many other funding. This work lead to the development of first refreshable holographic 3D display using photorefractive polymers (as given above).

- Developed novel photorefractive composite sensitive at 1 micrometer wavelength
- Developed for the first time photorefractive polymer composites sensitive at telecommunication wavelength using two-photon absorbing dyes

Assistant Research Scientist

03/2001 - 02/2003 THE UNIVERSITY OF ARIZONA, COLLEGE OF OPTICAL SCIENCES

- Developed highly performing polymer composites for photorefractive applications.
- Investigated the applications of new photorefractive polymer devices for optical information processing, dynamic holography and imaging.
- Fabricated devices using non-linear optical materials for Third Harmonic Generation (THG)
- Demonstrated photorefractivity by two-photon absorption process at telecommunication wavelengths.

Postdoctoral Research Associate (Council of Industrial and Scientific Research Fellow)

10/1996–12/2000 International School of Photonics, Cochin University of Science and Technology, India. Supervisor: Dr. C. P. Girijavallabhan

- Synthesized and developed macromolecular organic molecules impregnated polymer devices and studied their optical properties
- Investigated the optical limiting properties of naphthalocyanine doped polymer based devices
- Developed novel devices using phthalocyanine deposited optical fibers for optical sensor applications

TEACHING EXPERIENCE:

University of Central Florida

TEACHING COURSES:

- OSE6938 Photonic Polymer Materials, CREOL, The College of Optics and Photonics, Spring 2012
- EMA 3706 Structures and Properties of Aerospace Materials, Fall 2012
- EMA 4413 Electronic Properties of Materials, Spring 2013
- EMA 3706 Structures and Properties of Aerospace Materials, Fall 2013
- EGN 3365 Structure and Properties of Materials, Spring 2014

COLLEGE OF OPTICAL SCIENCES, THE UNIVERSITY OF ARIZONA

- Delivered lecture class on “Nanotechnology” to new graduate recruits (for Fall 2010)
- Conducted regular talks on organic semiconductor materials and devices to graduate and undergraduate student groups

Adjunct Faculty (Lecturer)

09/1995 - 03/2000 CENTER FOR ENGINEERING STUDIES, THE COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY, INDIA.

- Taught engineering chemistry and material science at the undergraduate level.

Teaching Assistant

04/1991–06/1996 DEPARTMENT OF APPLIED CHEMISTRY, THE COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY, INDIA

- Taught lecture and lab classes in Material Science, Electro-chemistry and Instrumentation at the graduate level.

CHRONOLOGY OF EDUCATION:

- B.S. Chemistry, Physics, Mathematics; Mahatma Gandhi University, 1988
- M.S. Chemistry; Mahatma Gandhi University, 1990
- Ph. D. Chemistry/Material Science, Cochin University of Science and Technology, 1996
Title of Doctoral Dissertation: “*Electro-optical properties of Metal Phthalocyanines and Naphthalocyanines*”. Advisor: Prof. V. N. Sivasankara Pillai.

PROFESSIONAL HONORS AND AWARDS:

- CAREER award (2014)
- Excellence in Research Award, University of Central Florida 2014
- World Technology Awards ENERGY Finalist, 2014, sponsored by The World Technology Network, FORTUNE and TIME magazines (<http://www.wtn.net/summit-2014/world-technology-award-finalists>).
- VEECO award for the best nanotechnology innovations 2010
- Faculty resource person, ERC-CIAN, NSF
- Council of Scientific and Industrial Research (CSIR), Research Associate Fellowship, Government of India (1996).
- Prestigious Dr. K. S. Krishnan Fellowship 1992 (limited to less than 10 young researchers/year in the country) awarded by the Department of Atomic Energy (DAE), Government of India

AWARDED GRANTS (PI/Co-PI):

Current:

- CAREER: Fast refreshing holographic 3D display using highly sensitive photorefractive polymers, NSF, 01/02/2014-31/01/2019 (PI)
- Printed Photonic Crystal-Based Tandem Polymer Solar Cell, NSF, 09/01/2012-03/31/2015, (PI)
- MRI: Development of Nonlinear Optical Spectrometer”, NSF, 09/01/12 – 08/30/2014 (Co-PI).
- Novel energy storage devices for micro satellite and space station applications, Florida Space Research Program, 08/01/2013 to 03/30/2015 (PI).
- NUE: Collaborative Networked Virtual Experiences for Nanotechnology Education, NSF, 08/01/2013 - 07/31/2016 (PI).

Previous:

- Highly efficient supercapacitors for space applications, Space Research Initiative, 07/15/2013 to 07/14/2014 (PI).
- Nanomanufactured Catalytic Arrays on Patterned Addressable Substrates for Advanced Electronic Device Applications, STTR Navy, 07/15/2011-02/28/2012 (PI).

- Printed Biopolymer-based Electro-Optic Device Components, AFRL 04/27/2012-04/29/2013, and (PI).
- Nanostructured Transparent Electrode Substrates", (Subcontract from University of Arizona) (PI).

UNIVERSITY OF ARIZONA

- "Nanoimprinted DNA-based photonic devices", PI, US Air Force, 07/01/10 - 01/31/11.
- "Nanoarchitected graphite electrodes for Li-ion batteries", PI, Desert Tech Investment group, Tucson, AZ, 12/01/09 - 07/31/10, (PI).
- "3D Holographic Display Technology with Large Area Photorefractive Polymers", PI, AFOSR, 06/18/10 – 09/30/11, (PI).
- "Updateable 3D display using large area photorefractive polymer devices", Co-PI, AFOSR, 07/01/09 - 06/30/11(Co-PI).
- "Micropatterned Micropolarizer Array", 4D Technologies, Phase I, 12/01/09-06/01/10 (Co-PI).
- "Updateable 3D display using large area photorefractive polymer devices", Co-PI, AFOSR, 02/20/09 - 07/14/2009 (Co-PI).
- "Rapid Recording Full Parallax Updatable 3D Display Using Large Area Photorefractive Devices", AFOSR, (Co-PI).

MAJOR MEDIA ATTENTIONS (from UCF):

Energy storing electrical cables (2014):

- Research highlighted in the News and Views section of *Nature* magazine; <http://www.nature.com/nature/journal/v509/n7502/full/509568a.html>
- Reuters report: <http://www.reuters.com/article/2014/06/05/us-usa-florida-nanotechnology-idUSKBN0EG2LN20140605>
- Yahoo News: <http://news.yahoo.com/copper-wires-may-batteries-florida-researchers-191817518.html>
- The USA Today: <http://theusatodaynews.com/copper-wires-may-also-work-as-batteries-florida-researchers-say/>
- American Institute of Physics TV segment: Nanowire Packs Portable Power: <http://www.insidescience.org/content/nanowire-packs-portable-power/1926>
- Motherboard: <http://motherboard.vice.com/read/new-nanotechnology-turns-your-clothes-into-a-battery>
- Huffington Post (UK): http://www.huffingtonpost.co.uk/2014/06/03/science-battery-jacket-smartphone_n_5436353.html?utm_hp_ref=uk-tech&ir=UK+Tech
- Popular Science: <http://www.popsci.com/article/technology/two-one-wires-could-turn-clothes-batteries>
- Science Daily:<http://www.sciencedaily.com/releases/2014/06/140602101714.htm>
- IEEE Spectrum: <http://spectrum.ieee.org/nanoclast/semiconductors/materials/nanowires-enable-a-cable-to-both-conduct-and-store-electricity>
- MRS Materials 360: <http://www.materials360online.com/newsListing/0/10?categoryId=1>
- Fox News Orlando: <http://www.myfoxorlando.com/story/25686820/nanotechnology-research-at-ucf-could-change-how-we-send-and-store-electricity>

- CTV (Canada): <http://www.ctvnews.ca/sci-tech/nano-tech-could-use-clothes-to-power-electrical-devices-1.1854257>
- Zee News (India): http://zeenews.india.com/news/science/soon-electric-wires-to-charge-your-cars-phones_936980.html
- Science & Vie (France): <http://www.science-et-vie.com/?s=Jayan+Thomas&recherche=true>

Gold Nanoclusters for optical limiting applications (2013):

- Popular Mechanics (report): <http://www.popularmechanics.com/technology/aviation/safety/6-better-ways-to-keep-airports-safe-6#slide-6>
- *American Institute of Physics* TV segment, “New Material Keeps Pilots Safe from Lasers”, (<http://www.insidescience.org/content/new-material-keeps-pilots-safe-lasers/940>)
- Fox Orlando TV channel: <http://www.myfoxorlando.com/video?clipId=8511462&topVideoCatNo=237186&autoStart=true>
- Orlando Sentinel Newspaper: <http://www.orlandosentinel.com/technology/os-tech-gold-nano-research-20130310,0,3230881.story>
- SPIE Newsroom: http://spie.org/x93481.xml?highlight=x2400&WT.mc_id=KNRNANOE
- Science Daily: <http://www.sciencedaily.com/releases/2012/08/120829131630.htm>
- Optics.org: <http://optics.org/news/4/3/53>
- Physics.org: <http://phys.org/news265462392.html>

Printed Supercapacitors (2013)

- IEEE Spectrum: <http://spectrum.ieee.org/nanoclast/semiconductors/nanotechnology/nano-printing-technique-enables-high-energy-density-supercapacitors>

PROFESSIONAL SERVICE/OUTREACH:

- Panelist, ECCS, NSF 2013
- Program committee and session chair, Light Manipulating Organic Materials and Devices II (SPIE, 2006- to date, Optics and Photonics)
- Program committee, FLAVS Conference, 2013 and 2014
- Conference session chair, Fabrication and Properties of Oxide Thin Films and Composites, *IUMRS International Conference on Electronic Materials*, September 23 - 28 (2012), Pacifico Yokohama, Japan.
- NASA mentor for graduate/undergraduate students
- NSF REU Mentor
- Reader Advisory panel, *Nature* (2011)
- Nature Photonics reader advisory panel 2009
- Proposal Reviewer: American Chemical Society, NASA
- Organizing committee, Optical Processes in Organic Materials and Nanostructures (SPIE-The International Society for Optical Engineering) 2006-current.
- Reviewer for *Nature Materials*, *Nature Nanotechnology*, *Advanced Materials*, *Advanced Energy Materials*, *Advanced Functional Materials*, *Small*, *Journal of Physical Chemistry*, *Optics Express*, *Chemical Physics*, *Optical Engineering*, Reviewer, *Journal of Applied Physics*, *Applied Physics Letters* and *Nanoscale*.

- Research Experience for Undergraduates Program (within NSF Science and Technology Center) – 2006 - 2013 (one student/year)
- Research Experience for School Students (within NSF ERC: Center on Integrated Access Networks [CIAN]), 2009-2010 (two students)
- Served in the organizing committee of “Workshop on Industrial and Medical Applications of Lasers (WIMAL-2000),” India, *Feb 27-28, 2000*
- Organizing committee member, “National Seminar on High Power Lasers and Their Applications,” India, *Feb 27-28, 1999*

PATENTS (Filed and provisional):

- Nano-architected carbon structures and methods for fabricating the same (No. 13/378,026).
- Doped –carbon nano-architected structures and methods for fabricating the same (PCT/US2010/040237).
- Self assembled magnetic nanoparticle polymer composites with enhanced magneto-optic properties (UA 08-086)
- Nanomolded DNA-CTMA Structures and Photonic Devices (Provisional patent: US 61/690,381).
- Nanostructured electrodes and active polymer layers for solar cells (PCT/US2011/047474).
- Laser carbonization of nanostructures (Provisional patent: Attorney Docket N.2085).
- Highly sensitive photorefractive polymers using carrier multiplication (Provisional patent: P5286U00).
- Nanorod electrodes and energy storage coaxial cables (Provisional patent: 32847PRV).

SUPERVISING/SUPERVISED STUDENTS:

- Research Scientists/Associates: 2
- Current Graduate students: 4
- Current undergraduate students: 7
- School students: 3
- Co-supervised Ph. D students (Ph. D awarded): 1 (Binh Au Thanh Duong)
- Supervised Research Associates (University of Arizona): Arshad Sayyad

PROFESSIONAL SOCIETY MEMBERSHIPS:

- Member, American Association for the Advancement of Science
- Member, SPIE-The International Society for Optical Engineering
- Member, OSA (Optical Society of America)
- Member, MRS (Material Research Society)

COLLABORATORS AND CO-EDITORS:

Rongchao Jin, Carnegie Mellon University; Wolfgang M. Sigmund, University of Florida; Raouf Loutfy, MER Corporation, Emily Heckmann, Air Force Laboratory, RJDP; Herman Offerhaus, University of Twente, The Netherlands; Robert A. Norwood, University of Arizona, Dean R. Evans, Wright-Patterson Air Force Base, Ohio; Nasser Peyghambarian, University of Arizona; Jeffrey Winiarz, Missouri University of Technology; Supapan Seraphin, University of Arizona.

PUBLICATIONS/CREATIVE ACTIVITY:

Edited books and chapters in scholarly books and monographs

1. J. Thomas, R. A. Norwood and N. Peyghambarian, (Book chapter) “*New Directions in Holography and Speckles*,” editors: H. J. Caulfield and C. S. Vikram, American Scientific Publishers, California.
2. J. Thomas “Organic Photorefractive devices” in “Handbook of organic materials for optical and optoelectronic devices: properties and applications”; Edited by: Dr. Oksana Ostroverkhova, Woodhead Publishing Limited, 2013.

Refereed journals:

3. Z. Yu, L. Tetard, L. Zhai, **J. Thomas**, “Supercapacitor electrode materials: Nanostructures from 0 to 3 dimensions”; *Energy & Environmental Science*, 2014, DOI: 10.1039/C4EE03229B.
4. Z. Yu, M. McInnis, J. Calderon, S. Seal, L. Zhai, **J. Thomas**, “Functionalized graphene aerogel composites for high-performance asymmetric supercapacitors”, *Nano Energy*, 11, 611(2015).
5. L. Zhai, S. I. Khondaker, **J. Thomas**, C. Shen, M. McInnis,” Ordered Conjugated Polymer Nano- and Microstructures: Structure Control for Improved Performance of Organic Electronics” (accepted for publication) *Nano Today* (2014).
6. Z. Yu and **J. Thomas**, “Coaxial supercapacitor-electrical cables: Integrating energy storage device into electrical cables”, *Adv. Mater. (Cover story)* 26, 4279 (2014). *Nature News and Views*: <http://www.nature.com/nature/journal/v509/n7502/full/509568a.html>
Major media coverage includes: Reuters, Yahoo News, USA Today, Huffington Post, Popular Science, Motherboard, IEEE Spectrum and Science Daily.
7. P. Chantharasupawong, L. Tetard, **J. Thomas**, Coupling Enhancement and Giant Rabi-Splitting in Large Arrays of Tunable Plexcitonic Substrates, *J. Phys. Chem. C*, 118, 23954 (2014).
8. P. Chantharasupawong, C. W.Christenson, R. Philip, L. Tetard, L. Zhai, J. Winiarz, M. Yamamoto , R. R. Nair, **J. Thomas**, “Photorefractive performances of a graphene-doped PATPD/7-DCST/ECZ composite”, *J. Mater. Chem. C*, 2, 7639 (2014)
9. Z. Yu, C. Li, D. Abbitt, **J. Thomas**, “Flexible, sandwich-like Ag-nanowire/PEDOT: PSS nanopillar / MnO₂ high performance supercapacitors”, *J. Mater. Chem. A (cover story)*, 2, 10923 (2014).
10. B. Duong, H. Khurshid, P. Gangopadhyay, J. Devkota, K. Stojak, H. Srikanth, L. Tetard, R. A. Norwood, N. Peyghambarian, M-H. Phan, **J. Thomas**, “Enhanced Magnetism in Highly Ordered Magnetite Nanoparticle-filled Nanohole Arrays“ *Small* (Cover story), 10, 2840 (2014).

11. B. Duong, Z. Yu, P. Gangopadhyay, S. Seraphin, N. Peyghambarian, **J. Thomas**, "High throughput printing of nanostructured carbon electrodes for supercapacitors", *Adv. Mater. Interfaces*, 1, 1300014 (2014).
12. A. Okada, K. Uehara, M. Yokura, M. Matsui, K. Inaba, S. Kobayashi, K. Endo, N. Iwata, S. Arisawa, **J. Thomas**, R. John, S. L. Reddy, T. Endo, "Double-layer fabrication of cubic-manganites/hexagonal-ZnO on various substrates by ion beam sputtering, and variable electrical property", *Jpn. J. Appl. Phys.* 53, 05FB10 (2014).
13. C. M. Liebig, S. H. Buller, P. P. Banerjee, S. A. Basun, P. -A. Blanche, **J. Thomas**, C. W. Christenson, N. Peyghambarian, D. R. Evans, "Achieving enhanced gain in photorefractive polymers by eliminating electron contributions using large bias fields", *Opt. Exp.* 21, 30392 (2013).
14. A. A. Khosroabadi, P. Gangopadhyay, B. Cocilovo, L. Makai, P. Basa, B. Duong, **J. Thomas**, R. A. Norwood, "Spectroscopic ellipsometry on metal and metal oxide multi-layer hybrid plasmonic nanostructures", *Opt. Lett.* 38, 3969 (2013).
15. B. Duong, P. Gangopadhyay, J. Brent, S. Seraphin, R. Loutfy, N. Peyghambarian, **J. Thomas**, Printed sub-100nm polymer-derived ceramic structures *ACS Appl. Mater. Interfaces*, 5, 3894 (2013).
16. Z. Yu, B. Duong, D. Abbitt and **J. Thomas**, "Highly Ordered MnO₂ Nanopillars for Enhanced Supercapacitor Performance" (frontispiece) *Adv. Mater.* 25, 3302 (2013). Highlighted in *IEEE Spectrum*.
17. A. Amooali, P. Gangopadhyay, B. A-T Duong, **J. Thomas**, A. K. Sigdel, J. J. Berry, T. Gennet, N. Peyghambarian, R. A. Norwood, "Fabrication, Electrical and Optical Properties of Silver, Indium Tin Oxide (ITO) and Indium Zinc Oxide (IZO) Nanostructure Arrays", *Phys. Status Solidi A* (Cover story), 1–8 (2013).
18. P. Chantharasupawong, R. Philip, **J. Thomas**, "Simultaneous optical and photoacoustic measurement of nonlinear absorption", *Appl. Phys. Lett.* 102, 041116 (2013)
19. B. Cocilovo, A. Amooali, S. Shahin, S. Islam, B. A. T. Duong, P. Gangopadhyay, **J. Thomas**, R. Norwood, "The Effect of Modular Diffraction Gratings on Absorption in P3HT:PCBM Layers", *Appl. Opt.* 52, 1025 (2013).
20. R. Philip, P. Chantharasupawong, H. Qian, R. Jin, **J. Thomas**, "Evolution of Nonlinear Optical Properties: From Gold Atomic Clusters to Plasmonic Nanocrystals", *Nano Lett.*, 12, 4661–4667 (2012).
(**Media Coverage:** Popular Mechanics, SPIE Newsroom, American Institute of Physics TV, Orlando Sentinel, IEEE Spectrum, Science Daily, Optics.org and Physics.org).

21. P. Chantharasupawong, R. Philip, T. N. Narayanan, P. M. Ajayan, **J. Thomas** "Optical power limiting in fluorinated graphene oxide: An insight into the nonlinear optical properties", *J. Phys. Chem. C*, 116, 25955 (2012).
22. B. Duong, P. Gangopadhyay, S. Seraphin, **J. Thomas** "Multiwall carbon nanotubes grown by thermocatalytic carbonization of polyacrylonitrile", *Carbon* 50, 4750 (2012).
23. P. Chantharasupawong, R. Philip, T. Endo and **J. Thomas**, "Enhanced optical limiting in nanosized mixed zinc ferrites", *Appl. Phys. Lett.* 100, 221108 (2012).
24. X. Zhu, J. Wang, D. Nguyen, **J. Thomas**, R. A. Norwood and N. Peyghambarian, "Linear and nonlinear optical properties of Co₃O₄nanoparticle-doped polyvinyl-alcohol thin films", *Opt. Mater. Exp.*, 2, 103 (2012).
25. P. P. Banerjee, S. H. Buller, C. M. Liebig, S. A. Basun, G. Cook, D. R. Evans, P.-A. Blanche, **J. Thomas**, C. W. Christenson, and N. Peyghambarian, "Time dynamics of self-pumped reflection gratings in a photorefractive polymer", *J. Appl. Phys.* 111, 013108 (2012).
26. **J. Thomas**, P. Gangopadhyay, E. Araci, R. A. Norwood., N. Peyghambarian, "Nanoimprint by Melt Processing: An Easy Technique to print versatile nanostructures", *Adv. Mater.* 23, 4782 (2011), Highlighted on *MaterialsViews.com* (http://www.materialsviews.com/details/news/1358279/Nanoprinting_on_Patterned_Surfaces.html).
27. C. Sheng, Q. Chen, R. A. Norwood, J. Wang, **J. Thomas**, and N. Peyghambarian, "Simple way for achieving passive all-optical switching of continuous waves lasers using pure nematic liquid crystal", *Appl. Opt.*, 50, 5788 (2011).
28. C. W. Christenson, C. Greenlee, B. Lynn, **J. Thomas**, P.-A. Blanche, R. Voorakaranam, P. St. Hilaire, L. J. LaComb, Jr, R. A. Norwood, M. Yamamoto and N. Peyghambarian, "Interdigitated coplanar electrodes for enhanced sensitivity in a photorefractive polymer," *Opt. Lett.* **36**, 3377 (2011).
29. **J. Thomas**, C. W. Christenson, P.-A. Blanche, M. Yamamoto, R. Norwood, N. Peyghambarian, "Photoconducting polymers for photorefractive 3D display applications" *Chemistry of Materials* (invited review article) *Chem. Mater.* **23**, 416 (2011).
30. C. Sheng, Q. Chen, R. A. Norwood, J. Wang, **J. Thomas** and N. Peyghambarian, "Simple way for achieving passive all-optical switching of continuous waves lasers using pure nematic liquid crystal," *Appl. Opt.*, **50**, 5788 (2011).
31. P.-A. Blanche, A. Bablumian, R. Voorakaranam, A. Ordyan, C. Christenson, D. Lemieux, W. Lin, S. Rokutanda, T. Gu, D. Flores, P. Wang, **J. Thomas**, R. A. Norwood, M. Yamamoto and N. Peyghambarian, " Holographic 3D Telepresence Using Large Area Photorefractive Polymer " (Cover story), *Nature* **468**, 80 (2010).
32. C. W. Christenson, **J. Thomas**, P-A. Blanche, R. Voorakaranam, R. A. Norwood, M. Yamamoto, N. Peyghambarian, "Grating dynamics in a photorefractive polymer with Alq₃ electron traps", *Optics Express*, **18**, 9358 (2010).

33. C. W. Christenson, P-A. Blanche, S. Tay, R. Voorakaranam, V. Densmore, P. Saint-Hilaire, T. Gu, W. Lin, D. Flores, M. Yamamoto, **J. Thomas**, R. A. Norwood, N. Peyghambarian, "Materials for an Updatable Holographic 3D Display", *IEEE Journal of Display Technology*, **6** (7) (2010).
34. P. Gangopadhyay, A. Lopez-Santiago, R. Voorakaranam, R. Himmelhuber, C. Greenlee, **J. Thomas**, A. Persoons, R. A. Norwood, T. Verbiest, H. Yamada and N. Peyghambarian, "Magnetite–Polymethylmethacrylate Core–Shell Nanocomposites: Applications in All-Optical Magnetometers", *Nonlinear Optics and Quantum Optics*, **41**, 418 (2010).
35. **J. Thomas**, R. Norwood, N. Peyghambarian, "Nonlinear Optical Polymers for Photorefractive Applications" (invited review article), *J. Mater. Chem.*, **19**, 7476 (2009).
36. A. Lopez-Santiago, P. Gangopadhyay, **J. Thomas**, R. A. Norwood, A. Persoons, N. Peyghambarian, "Faraday rotation in magnetite-polymethylmethacrylate core-shell nanocomposites with high optical quality", *Appl. Phys. Lett.* **95**, 143302/1-143302/3, (2009).
37. C. Xiaochun, **J. Thomas**, P. Gangopadhyay, R. A. Norwood, N. Peyghambarian, D. V. McGrath, "Modification of symmetrically substituted phthalocyanines using click chemistry: phthalocyanine nanostructures by nanoimprint lithography", *J. Am. Chem. Soc.* **131**, 13840-13843 (2009).
38. C. X. Sheng, R. A. Norwood, J. F. Wang, **J. Thomas**, D. Steeves, B. Kimball, N. Peyghambarian, "Nonlinear optical transmission of lead phthalocyanine-doped nematic liquid crystal composites for multiscale nonlinear switching from nanosecond to continuous wave", *Appl. Opt.* **48**, 2731 (2009).
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40. C. Sheng, R. A. Norwood, J. Wang, **J. Thomas**, Y. Wu, Z. Zheng, N. Tabirian, D. M. Steeves, B. R. Kimball, and N. Peyghambarian, "Time-resolved studies of photoinduced birefringence in azobenzene dye-doped polymer films", *Appl. Opt.* **47**, 5074 (2008).
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- J. Thomas, "Recent Advances in Nanotechnology Research" (Invited), S. B. College, M. G. University, India (July 8, 2014)
- J. Thomas, "Coaxial cables for energy storage" (Invited), Mar Thoma College, M. G. University, India (July 8, 2014)
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