Curriculum Vitae

Name: K. S. NARAYAN

Institution: Jawaharlal Nehru Centre for Advanced Scientific Research, (JNCASR), Jakkur
Bangalore 560064, Tel: 91-80-22082822, Fax: 91-80-22082766, email: narayan@jncasr.ac.in

Present Position: Professor and JC Bose National Fellow

Academic Background:

Degree	Year	University/Institute
M.Sc. (Physics)	1986 (June)	IIT, Bombay
M.S., Ph.D	1991 (Dec.)	The Ohio State University

PhD Research Thesis : Phase Transitions in Low Dimensional Molecular Magnets
Supervisor: Prof. A. J. Epstein

Details of Employment Professional Training and Research experience

Teaching Associate	1986-1988	Physics Department	The Ohio State Univ. USA
Research Associate	1988-1991	Physics Department	The Ohio State Univ. USA
Research Scientist	1992-1994	Polymer Branch/ML	Wright Patterson Air Force Base, Dayton, OH
Adjunct Faculty	1993-1994	Physics Department	Wright State Univ., OH, USA
Faculty Fellow	1994-2000	Chemistry and Physic of materials unit (CPMU)	JNCASR, Bangalore India
Associate Professor	2000-2006	CPMU,	JNCASR
Professor	2006-Present	CPMU & Adjunct Faculty Neuroscience Unit	JNCASR
Dean (Academic)	2005-2008		JNCASR
Dean (R&D)	2011-2019		JNCASR
President (In-Charge)	2013-2015 2019–2020Feb		JNCASR

Visiting Positions

Visiting Faculty	2000 Jan.	Physics Dept., Technion, Haifa,Israel
Visiting Faculty	2002 Sum.	Physics Dept., Ohio State University
Visiting Faculty	2003 Sum.	Mat. Sci. and Eng. Dept., Univ. of Michigan
Distinguished Scientist	2005 Sum.	Embedded and Physical Systems, Motorola R&D Arizona
Visiting Faculty	2009 Sum.	Ecole Normal Superiure, Cachan, France
Visiting Faculty	2010 Sum.	Northwestern Univ. USA
Distinguished Visiting Professor	2024-2026	Indian Institute of Technology Bombay

Other Professional Engagements

- Member, Research Advisory Council, NPL N.Delhi (2020-2023)
- Past Member, Council of Management and Academic Advisory Council, JNCASR
- Past Member, Governing board, INST, Mohali (2017-2021)
- Coordinator of Technical Research Centre, JNCASR (2016-2021)
- Expert Review Committee member of TRC, ARCI Hyderabad (2022-2027)
- Chair, Sectional Committee-Physics Indian Academy of Science Bangalore (2018-2021)
- Chair for the Working group on Physics in Industry of IUPAP (International Union for Pure and Applied Physics) (2019-2021)
- Member, Sectional Committee-Physics Indian National Science Academy N. Delhi (2017-2020)
- International Committee Member of ICSM and OP (Optical Probes) conference series
- Editorial Board Member for Materials Horizon–RSC(UK), ACS Applied Electronic Materials, Elsevier - Synthetic Metals
- Member of Department of Science and Technology, Government of India, FIST Advisory Board, and Inspire Faculty Selection (Material Sciences) Committee
- Management Board Member of IITACB
- Advisory Board Member SID-IISc and CSTEP

Professional Recognition, Awards, Fellowships Received

- Fellow of Indian National Science Academy, India
- Fellow of National Academy of Sciences, India
- Fellow of Indian Academy of Sciences, India
- JC Bose Fellowship, DST India
- Silver Jubilee Professor JNCASR
- National Prize for Research in Energy Materials and Devices
- IEEE Senior Member and EDS-Distinguished Lecturer
- Awarded the Materials Science Prize Medal of the Materials Research Society of India,2008
- Invited Speaker at International Conferences: (APS, MRS, ICSM, OP, IEEE)
- DAE-Outstanding Research Investigator Award – 2009-2014
- Awarded the Materials Research Society of India Medal, 1997

Co-Founder of Startup: *hbaromega (ħω) Pvt. Ltd.- A Photovoltaic diagnostic Company- winner of Elevate-100 startup grant 2023 by Karnataka State Govt., selected for seed grant IIT(M) Pravartak.*

Co-ordinator of Technical Research Centre at JNCASR (2015-2020) A Department of Science and Technology Initiative to Translate and Commercialize Academic Inventions.

Nurturing Translation Research In the administrative capacity as Dean (R&D) (2011-2018) and President-In Charge of JNCASR; the culture of startups, innovation and translation activities at JNCASR led to sizable number of international patents, recognition of a national award from Ministry of Commerce, GoI and CII/IPO, and providing directions to successful startups.

Number of Students Guided for PhD Thesis: **25**

Number of Students Guided for MS Thesis: **9**

Number of Undergraduate students mentored as part of summer internship program: > 50

Number of Postdoc students supervised > 10

Patents

1. U.S. Patent No. 6,992,322: "Light Responsive Polymer based field effect transistor"
2. US Patent 9,037,251, European PatentEP-2585015 “Artificial Retina Device”
3. CN 103179928 B, “Artificial Retina Device”
4. US 9322713 B2, “Bulk heterojunction/electrolyte polymers as novel biocompatible photoactive multi color-sensing technology”
5. IN 329957 “A Method of forming a photo voltaic cell”
6. Organic Solar Cells and Methods thereof (European Patent Application No. 12812359).
7. Method And System To Assess Solar Cells (App. No. 201841020900, PCT/IB2018/056731)
8. 3D-Microfluidic Device for Cell culture and Biomedical application (Provisional Application)

Publication Statistics: Number of Papers ~ 200, Number of Citations > 5500

Selected List of Recent Publications (Relevant to the Project , up to date list available on Google Scholar)

Enhancement of dual zero phonon line emissions in nanodiamonds using quasiperiodic photonic structures SS Behera, A Redhu, M Aleem, RV Nair, KS Narayan Optics Letters 49 (3), 510-513, 2024

Structured hybrid photodetectors using confined conducting polymer nanochannels S. Das, K.H. Girish, N.Ganesh, and K S Narayan, Nanoscale Advances, 2023

Investigations on artificially extending the spectral range of natural vision A. Krishnan, C.S.Deepak and K S Narayan, Applied Physics Letters Bioengineering,2023

Photonic Structure Induced Enhancement in the Triplet State Dynamics of Organic Phosphors at Room Temperature S S Behera, A Ghorai, S Garain, R V Nair, S J George, and K S Narayan, Advanced Optical Materials, 2300931,2023

Ordered and disordered microstructures of nanoconfined conducting polymers S Das, P Venkatesh, S Ghosh, and K S Narayan, Soft Matter 19 (29), 5641-5650, 2023.

Buried Interface Passivation of Perovskite Solar Cells by Atomic Layer Deposition of Al2O3 S Ghosh, D Pariari, T Behera, PP Boix, N Ganesh, S Basak, A Vidhan, N. Sarda, Iván Mora-Seró, A. Chowdhury K S Narayan, D.D Sarma, S. Sarkar ACS Energy Letters 8 (4), 2058-2065, 2023

Probing charge carrier and triplet dynamics in TADF-based OLEDs using transient electroluminescence studies A Ghorai, SS Behera, S Purohit, K S Narayan, Applied Physics Letters 122 (20),2023.

Temporal Characteristics of Neonatal Chick Retinal Ganglion Cell Responses: Effects of Luminance, Contrast, and Color C.S. Deepak, Abhijith Krishnan, K S Narayan, Biarchiv doi: https://doi.org/10.1101/2022.07.28.499133,2023

Solution-Processed Photovoltaics A. Azeez and K S Narayan, Energy Materials, World Scientific 2023 pp 1-33,2022

Solution Processed Active Materials for Pixel Sensor Element and Integrated Circuits N S Purohit, N.Ganesh, and K S Narayan, IEEE Journal of Flexible Electronics 2023 (to appear),2022

2D Position-Sensitive Hybrid-Perovskite Detectors SS Behera and K S Narayan, Macromolecular Materials and Engineering 2022, 307, 11 2200384,2022

Light Controlled Signaling Initiated by Subretinal Semiconducting-Polymer Layer in Developing-Blind-Retina Mimics the Response of the Neonatal Retina, C.S. Deepak, Abhijith Krishnan, K S Narayan, 9 (3), 036019 J. Neural Eng, 2022

Insights into the charge carrier dynamics in perovskite/Si tandem solar cells using transient photocurrent spectroscopy Anaranya Ghorai, Prashant Kumar, Suhas Mahesh, Yen-Hung Lin, Henry Snaith, and K S Narayan, Applied Physics Letters (120 (17), 173504),2022

Visualization of carrier transport in lateral metal-perovskite-metal structures and its influence on device operation N. Ganesh, A. Z. Ashar, Sumukh Purohit, K. L. Narasimhan, and K S Narayan, Physical Review Applied, 17 (2), 024060 ,2022

Confinement highlights the different electrical transport mechanisms prevailing in conducting polymers S Das, A Kumar, K S Narayan, Physical Review Materials 6 (2), 025602 ,2022

Strategy for enhancing performance of organic ferroelectric memristors R Vijayan, SS Behera, K S Narayan, Materials Research Bulletin 145, 111536,2022

2D Position-Sensitive Hybrid-Perovskite Detectors N Ganesh, K Schutt, PK Nayak, HJ Snaith, K S Narayan, ACS Applied Materials & Interfaces 13 (45), 54527-54535,2021

High-Speed Laser Beam Induced Current Imaging: A Complementary Quantitative Diagnostic Tool for Modules P Kumar, I Ghosekar, K S Narayan, IEEE Journal of Photovoltaics 11 (6), 1436-144,2020

Impact of trap filling on carrier diffusion in single crystals
N Ganesh, A Ghorai, S Krishnamurthy, S Banerjee, KL Narasimhan, S.Ogale and K S Narayan, Physical Review Materials 4 (8), 084602,2020

Enhanced device performance via interfacial engineering in non-fullerene acceptor based organic solar cells A Azeez, K S Narayan, Applied Physics Letters 117 (4), 043302,2020

An integrated 3D-fluidic device with bubble guidance mechanism for long-term primary and secondary cell recordings on multielectrode array platform Anil Krishna Konduri, C S Deepak, Sumukh Anil Purohit and K S Narayan, DOI:10.1088/1758-5090/aba500 Biofabrication ,2020

Toward reliable high performing organic solar cells: Molecules, processing, and monitoring R Vijayan, A Azeez, K S Narayan, APL Materials 8 (4), 040908,2019

Red-Emitting Delayed Fluorescence and Room Temperature Phosphorescence from Core-Substituted Naphthalene Diimides S Kuila, A Ghorai, PK Samanta, RBK Siram, SK Pati, K S Narayan, S.J.George
Chemistry-A European Journal 25 (70), 16007-16011,2019

Photovoltaics: Materials and Devices K S Narayan,
Advances In The Chemistry And Physics Of Materials: Overview Of Selected

Wavelength-Dependent Charge Carrier Dynamics for Single Pixel Color Sensing Using Graded Perovskite Structures N Ganesh, R Shivanna, RH Friend, K S Narayan, Nano letters 19 (9), 6577-6584,2019

Mixed-Stack Charge Transfer Crystals of Pillar [5] quinone and Tetrathiafulvalene Exhibiting Ferroelectric Features KI Shivakumar, K Swathi, TC Das, A Kumar, RD Makde, K Vanka, K.S.Narayan, G.J. Sanjayan Chemistry–A European Journal 25 (35), 8425-8425,2019

Electrospun Fibers Containing Emissive Hybrid Perovskite Quantum Dots
P Kumar, N Ganesh, K S Narayan, ACS applied materials & interfaces 11 (27), 24468-24477,2019

Enhanced Stability and Optimized Morphology Induced by Electric-Field-Assisted Annealing of Bulk Heterojunction Solar Cells, R Vijayan, A Azeez, K S Narayan, Solar RRL 1900120,2019

Significant Increase in Electrical Transport of Conducting Polymers Confined in Alumina Nanopores S Das, K S Narayan, The Journal of Physical Chemistry C 123 (17), 11284-11291,2019

A Solution Processed Ultrathin Molecular Dielectric for Organic Field-Effect Transistors K Swathi, V Murugesan, K Bhattacharyya, TK Mukhopadhyay, A Datta K.S.Narayan ACS Applied Electronic Materials 1 (4), 485-493,2019

Melanin incorporated electroactive and antioxidant silk fibroin nanofibrous scaffolds for nerve tissue engineering M Nune, S Manchineella, T Govindaraju, K S Narayan, Materials Science and Engineering: C 94, 17-25, 2019.

Noncontact Electrical Probe for Monitoring Cellular Processes in Primary Retinal Explants S.Purohit, CS Deepak S Nisha K S Narayan,, Advanced Materials Technologies 1800564, 1-7,2018

An analysis of the factors determining the efficiency of photocurrent generation in polymer: nonfullerene acceptor solar cells H Cha, CH Tan, J Wu, Y Dong, W Zhang, H Chen, S Rajaram, K S Narayan, J. Durrant Advanced Energy Materials 8 (32), 1801537, 2018

Role of Charge-Transfer State in Perylene-Based Organic Solar Cells
R Shivanna, S Rajaram, K S Narayan, ChemistrySelect 3 (32), 9204-9210,2018

Self-powered single semiconductor nanowire photodetector
S Sett, S Sengupta, N Ganesh, K S Narayan, AK Raychaudhuri Nanotechnology 29 (44), 445202,2018

Supramolecular complexes of poly (3-Hexylthiophene)-block (and random)-poly [3-(2-(6-carboxyhexyl) methyl) thiophene] copolymers with perylene bisimide
S Shinde, R Vijayan, K S Narayan, SK Asha Journal of Polymer Science Part A: Polymer Chemistry 56 (14), 1574-1583,2018

Self-Assembled Photochromic Molecular Dipoles for High-Performance Polymer Thin-Film Transistors SP Senanayak, VK Sangwan, JJ McMorrow, K Everaerts, Z Chen, M. Hersam, T.J. Marks, K S Narayan, ACS applied materials & interfaces 10 (25), 21492-21498,2018

Understanding the adhesion and optical properties of eutectic metal alloys for solution-processed electronics P Kumar, S Aggarwal, C Narayana, K S Narayan, Journal of Applied Physics 123 (8), 083104,2018

Sensors: Hybrid Perovskite-Based Position-Sensitive Detectors (Adv. Electron. Mater. 2/2018) AZ Ashar, N Ganesh, K S Narayan, Advanced Electronic Materials 4 (2), 1870012, 2018

Hybrid Perovskite-Based Position-Sensitive Detectors AZ Ashar, N Ganesh, K S Narayan, Advanced Electronic Materials 4 (2), 1700362, 2018

Insights Into the Microscopic and Degradation Processes in Hybrid Perovskite Solar Cells Using Noise Spectroscopy A Singh, PK Nayak, S Banerjee, Z Wang, JTW Wang, HJ Snaith, K S Narayan, Solar RRL 2 (1), 1700173, 2018

Self-Assembled Porous Alumina Based Organic Nanotriode Arrays K Swathi, K S Narayan, Nano Letters 17 (12), 7945-7950, 2017

Influence of non-line of sight luminescent emitters in visible light communication systems A Ghorai, P Walvekar, S Nayak, K S Narayan, Journal of Optics 20 (1), 015703, 2017

Mixed-Stack Charge Transfer Crystals of Pillar [5] quinone and Tetrathiafulvalene Exhibiting Ferroelectric Features KI Shivakumar, K Swathi, TC Das, A Kumar, RD Makde, K Vanka, K S Narayan, Sanjayan Chemistry-A European Journal 23 (51), 12630-12635,2017

Facile Fabrication of Ultra-Stretchable Metallic Nanocluster Films for Wearable Electronics V Venugopalan, R Lamboll, D Joshi, K S Narayan, ACS applied materials & interfaces 9 (33), 28010-28018, 2017.

Synergistic Effects of Electric-Field-Assisted Annealing and Thermal Annealing in Bulk-Heterojunction Solar Cells R Vijayan, K Swathi, K S Narayan, ACS applied materials & interfaces 9 (23), 19436-19445, 2017

Electric field induced ferroelectric-surface modification for high mobility organic field effect transistors - 2017 AZ Ashar, K S Narayan, Organic Electronics 42, 8-12, 2017

Photocurrent imaging of phase segregation in a ternary polymer blend induced via a non-solvent route D Gupta, K Nagesh, K S Narayan, D Kabra Journal of Polymer Research 24 (2), 28, 2017

Kinetic Control of Perovskite Thin-Film Morphology and Application in Printable Light-Emitting Diodes P Kumar, B Zhao, RH Friend, A Sadhanala, K S Narayan, ACS Energy Letters 2 (1), 81-87, 2017

Microscopic and Degradation Processes in Hybrid Perovskite Solar Cells Using Noise Spectroscopy - A. Singh, P. K. Nayak, S. Banerjee, Z. Wang, H.Snaith, K S Narayan, Solar RRL, 2017

Multifunctional geometrical isomers of ferrocene-benzo [1, 2-b: 4, 5-b'] difuran-2, 6-(3 H, 7 H)-dione adducts: second-order nonlinear optical behaviour and charge transport … P Singla, NV Steerteghem, N Kaur, AZ Ashar, P Kaur, K Clays, K S Narayan, K Singh Journal of Materials Chemistry C 5 (3), 697-708, 2017

Image pixel device using integrated organic electronic components K Swathi, K S Narayan, Applied Physics Letters 109 (19), 193302 , 2016

Solution processed integrated pixel element for an imaging device . K Swathi, K S Narayan, Organic Sensors and Bioelectronics IX 9944, 99440T, 2016

Quantum confinement effects in organic lead tribromide perovskite nanoparticles . P Kumar, C Muthu, VC Nair, K S Narayan, The Journal of Physical Chemistry C 120 (32), 18333-18339, 2016

Multi-stimuli-responsive charge-transfer hydrogel for room-temperature organic ferroelectric thin-film devices -M Pandeeswar, SP Senanayak, K S Narayan, T Govindaraju Journal of the American Chemical Society 138 (26), 8259-8268, 2016

Molecular architectonics of naphthalenediimides for efficient structure-property correlation MB Avinash, K Swathi, K S Narayan, T Govindaraju ACS applied materials & interfaces 8 (13), 8678-8685, 2016

Tuning the HOMO energy levels in quinoline and biquinoline based donor-acceptor polymers M Tomar, AZ Ashar, K S Narayan, K Müllen, J Jacob Journal of Polymer Research 23 (3), 50 ,2016

Self-Assembled Nanodielectrics for High-Speed, Low-Voltage Solution-Processed Polymer Logic Circuits SP Senanayak, VK Sangwan, JJ McMorrow, K Everaerts, Z Chen, M Hersam, T J Marks, K.S Narayan Advanced Electronic Materials 1 (12), 1500226, 2015

Noise spectroscopy of polymer transistors R Harsh, K S Narayan, Journal of Applied Physics 118 (20), 205502, 2015

Charge versus Energy Transfer Effects in High-Performance Perylene Diimide Photovoltaic Blend Films PEK Ranbir Singh, Ravichandran Shivanna, Agathaggelos Iosifidis, Hans-Jürgen, K.S. Narayan, Panos ACS Applied Materials & Interfaces, 2015

Dipole-moment-driven cooperative supramolecular polymerization C Kulkarni, KK Bejagam, SP Senanayak, K S Narayan, S Balasubramanian, S J George Journal of the American Chemical Society 137 (11), 3924-3932, 2015

Interface engineering for efficient fullerene-free organic solar cells R Shivanna, S Rajaram, K S Narayan, Applied Physics Letters 106 (12), 33_1, 2015

Room-temperature bandlike transport and Hall effect in a high-mobility ambipolar polymer SP Senanayak, AZ Ashar, C Kanimozhi, S Patil, K S Narayan, Physical Review B 91 (11), 115302, 2015

Studies of long-lived photogenerated carriers in low band gap polymer photodiodes M Bag, K S Narayan, arXiv preprint arXiv:1502.03667, 2015

Ferroelectric polymer matrix for probing molecular organization in perylene diimides KV Chellappan, SK Kandappa, S Rajaram, K S Narayan, The journal of physical chemistry letters 6 (2), 224-229, 2015

Modulation of electronic and self-assembly properties of a donor-acceptor-donor- based molecular materials via atomistic approach J Dhar, K Swathi, DP Karothu, K S Narayan, S Patil ACS applied materials & interfaces 7 (1), 670-681, 2015

A Comparison of Charge Separation Dynamics in Organic Blend Films Employing Fullerene and Perylene Diimide Electron Acceptors JRD Safa, Shoaee, Florent Deledalle , Pabitra Shakya Tuladhar , Ravichandran K.S. Narayan, J.Durrant J. Phys. Chem. Lett. 6, 201-205, 2015

Organic photovoltaics: key photophysical, device and design aspects D Joshi, R Shivanna, K S Narayan,Journal of Modern Optics 61 (21), 1703-1713,2014

Nanostructured donor-acceptor self assembly with improved photoconductivity B Saibal, AZ Ashar, RN Devi, K S Narayan, SK Asha ACS applied materials & interfaces 6 (21), 19434-19448, 2014

Improved performance of solution-processed n-type organic field-effect transistors by regulating the intermolecular interactions and crystalline domains on macroscopic scale S Vasimalla, SP Senanayak, M Sharma, K S Narayan, PK Iyer Chemistry of Materials 26 (13), 4030-4037, 2014

Cu doping in ligand free CdS nanocrystals: conductivity and electronic structure study GK Grandhi, K Swathi, K S Narayan, R Viswanatha The journal of physical chemistry letters 5 (13), 2382-2389, 2014

Luminescent polymer films from simple processing of coronene and europium precursors in water M Planells, E Klampaftis, M Congiu, R Shivanna, KV Rao, O Chepelin, K.S.Narayan...European Journal of Inorganic Chemistry 2014 (19), 3095-3100, 2014

Zn (II) and Cu (II) complexes of a new thiophene-based salphen-type ligand: solution-processable high-performance field-effect transistor materials 2014 AK Asatkar, SP Senanayak, A Bedi, S Panda, K S Narayan, SS Zade Chemical Communications 50 (53), 7036-7039, 2014

Strategies for Fast-Switching in All-Polymer Field Effect Transistors SP Senanayak, K S Narayan, Advanced Functional Materials 24 (22), 3324-3331, 2014

Fabrication of single Si nanowire metal-semiconductor-metal device for photodetection K Das, S Samanta, P Kumar, K S Narayan, AK Raychaudhuri IEEE Transactions on Electron Devices 61 (5), 1444-1450, 2014

Naphthalene Diimide Copolymers with Oligo(*p*-phenylenevinylene) and Benzobisoxazole for Balanced Ambipolar Charge Transport NB Kolhe, AZ Ashar, K S Narayan, SK Asha Macromolecules 47 (7), 2296-2305, 2014

Photoconductive NSOM for mapping optoelectronic phases in nanostructures AJ Das, R Shivanna, K S Narayan, Nanophotonics 3 (1-2), 19-31 ,2014

Single CuTCNQ charge transfer complex nanowire as ultra high responsivity photo-detector R Basori, K Das, P Kumar, K S Narayan, AK Raychaudhuri Optics express 22 (5), 4944-4952, 2014

A polymer optoelectronic interface provides visual cues to a blind retina 2014 V Gautam, D Rand, Y Hanein, K S Narayan, Advanced Materials 26 (11), 1751-1756

Supramolecular P4VP-pentadecylphenol naphthalenebisimide comb-polymer: mesoscopic organization and charge transport properties R Narayan, P Kumar, K S Narayan, SK Asha Journal of Materials Chemistry C 2 (32), 6511-6519 ,2014

Polymer optoelectronic structures for retinal prosthesis V Gautam, K S Narayan, Organogenesis 10 (1), 9-12 ,2014

Morphology and electrostatics play active role in neuronal differentiation processes on flexible conducting substrates N Srivastava, J James, K S Narayan, Organogenesis 10 (1), 1-5, 2014

Charge generation and transport in efficient organic bulk heterojunction solar cells with a perylene acceptor R Shivanna, S Shoaee, S Dimitrov, SK Kandappa, S Rajaram, JR Durrant, K.S. Narayan Energy & Environmental Science 7 (1), 435-441, 2014

Solution processable benzooxadiazole and benzothiadiazole based DAD molecules with chalcogenophene: field effect transistor study and structure property relationship 2013. PB Pati, SP Senanayak, K S Narayan, SS Zade ACS applied materials & interfaces 5 (23), 12460-12468, 2014

Enhanced mobility and environmental stability in all organic field-effect transistors: The role of high dipole moment solvent NB Ukah, SP Senanayak, D Adil, G Knotts, J Granstrom, K S Narayan, ... Journal of Polymer Science Part B: Polymer Physics 51 (21), 1533-1542, 2013

Hybrid n-GaN and polymer interfaces: Model systems for tunable photodiodes P Kumar, S Guha, F Shahedipour-Sandvik, K S Narayan, Organic Electronics 14 (11), 2818-2825, 2013

Near-unity quantum yield in semiconducting nanostructures: structural understanding leading to energy efficient applications A Saha, KV Chellappan, K S Narayan, J Ghatak, R Datta, R Viswanatha The Journal of Physical Chemistry Letters 4 (20), 3544-3549, 2013

Synthesis and characterization of copolymers based on cyclopenta [c] thiophene and bithiazole and their transistor properties A Bedi, SP Senanayak, K S Narayan, SS Zade Journal of Polymer Science Part A: Polymer Chemistry 51 (20), 4481-4488, 2013

Neuronal differentiation of embryonic stem cell derived neuronal progenitors can be regulated by stretchable conducting polymers N Srivastava, V Venugopalan, MS Divya, VA Rasheed, J James, K.S. Narayan Tissue Engineering Part A 19 (17-18), 1984-1993, 2013

Synthesis of Solution-Processable Poly(cyclopenta[*c*]selenylvinylene) and Its Charge Transport Properties: Comparative Study with the Thiophene Analogue A Bedi, SP Senanayak, K S Narayan, SS Zade Macromolecules 46 (15), 5943-5950, 2013

Self-Assembly of π-Conjugated Amphiphiles: Free Standing, Ordered Sheets with Enhanced Mobility B Narayan, SP Senanayak, A Jain, K S Narayan, SJ George Advanced Functional Materials 23 (24), 3053-3060, 2013

Nanostructured Crystalline Comb Polymer of Perylenebisimide by Directed Self-Assembly: Poly (4-vinylpyridine)-pentadecylphenol Perylenebisimide R Narayan, P Kumar, K S Narayan, SK Asha Advanced Functional Materials 23 (16), 2033-2043, 2013

Retention of power conversion efficiency-from small area to large area polymer solar cells AJ Das, K S Narayan, Advanced Materials 25 (15), 2193-2199, 2013

Large photoresponse of Cu: 7, 7, 8, 8-tetracyanoquinodimethane nanowire arrays formed as aligned nanobridges R Basori, K Das, P Kumar, K S Narayan, AK Raychaudhuri Applied Physics Letters 102 (6), 061111, 2013

Organic/Polymeric Systems: Candidates for Optoelectronic Devices K S Narayan, Journal of the Indian Institute of Science 77 (3), 257,2013

Water-Gated Phospholipid-Monolayer Organic Field Effect Transistor Through Modified Mueller-Montal Method K S Narayan, BN Madhushankar, V Gautam, SP Senanayak, R Shivanna IEEE electron device letters 34 (2), 310-312, 2013

High-resolution photocurrent imaging of bulk heterojunction solar cells S Mukhopadhyay, AJ Das, K S Narayan, The journal of physical chemistry letters 4 (1), 161-169, 2013

Confinement induced stochastic sensing of charged coronene and perylene aggregates in α-hemolysin nanochannels R Shivanna, D Pramanik, H Kumar, KV Rao, SJ George, PK Maiti, K.S. Narayan Soft Matter 9 (42), 10196-10202, 2013

Large photoresponse of a single Si nanowire (diameter~ 50nm) Metal-Semiconductor-Metal device K Das, S Samanta, AK Raychaudhuri, P Kumar, K S Narayan, 2012 International Conference on Emerging Electronics, 1-4, 2012

Observation of a Large Photo-response in a Single Nanowire (Diameter~ 30 nm) of Charge Transfer Complex Cu: TCNQ R Basori, K Das, TP Sai, P Kumar, K S Narayan, AK Raychaudhuri arXiv preprint arXiv:1210.5207, 2012

Nonplanar perylene diimides as potential alternatives to fullerenes in organic solar cells S Rajaram, R Shivanna, SK Kandappa, K S Narayan, The journal of physical chemistry letters 3 (17), 2405-2408, 2012

Fluctuations in photocurrent of bulk heterojunction polymer solar cells—A valuable tool to understand microscopic and degradation processes M Bag, NS Vidhyadhiraja, K S Narayan, Applied Physics Letters 101 (4), 043903, 2012.

Rationalization of donor-acceptor ratio in bulk heterojunction solar cells using lateral photocurrent studies S Mukhopadhyay, K S Narayan,Applied Physics Letters 100 (16), 92, 2012

Polarization fluctuation dominated electrical transport processes of polymer-based ferroelectric field effect transistors SP Senanayak, S Guha, K S Narayan, Physical Review B 85 (11), 115311, 2012

Photocurrent noise in organic bulk heterojunction solar cells NS Vidhyadhiraja, M Bag, K S Narayan, Bulletin of the American Physical Society 57, 2012

Polarization fluctuation dominated electrical transport processes of polymer-based ferroelectric field effect transistors (9 pages) 115311 S P Senanayak, S Guha, K S Narayan, Physical Review-Section B-Condensed Matter 85 (11), 2012

Structure engineering of naphthalene diimides for improved charge carrier mobility: self-assembly by hydrogen bonding, good or bad? NB Kolhe, RN Devi, SP Senanayak, B Jancy, K S Narayan, SK Asha Journal of Materials Chemistry 22 (30), 15235-15246, 2012

Cyclopenta [c] thiophene oligomers based solution processable D-A copolymers and their application as FET materials A Bedi, SP Senanayak, S Das, K S Narayan, SS Zade Polymer Chemistry 3 (6), 1453-1460, 2012

Three-dimensional microlasers based on polymer fibers fabricated by electrospinning AJ Das, C Lafargue, M Lebental, J Zyss, K S Narayan, Applied physics letters 99 (26), 281, 2011

Synthesis and charge carrier mobility of a solution-processable conjugated copolymer based on cyclopenta [c] thiophene S Das, SP Senanayak, A Bedi, K S Narayan, SS Zade Polymer 52 (25), 5780-5787, 2011

Single-pixel, single-layer polymer device as a tricolor sensor with signals mimicking natural photoreceptors V Gautam, M Bag, K S Narayan,Journal of the American Chemical Society 133 (44), 17942-17949, 2011

Synthesis, characterization, and OFET characteristics of 3, 4-diaryl substituted poly (thienylene vinylene) derivatives G Saini, J Jacob, SP Senanayak, K S Narayan,Polymer bulletin 67 (5), 753-761, 2011

Direct observation of charge generating regions and transport pathways in bulk heterojunction solar cells with asymmetric electrodes using near field photocurrent microscopy S Mukhopadhyay, S Ramachandra, K S Narayan, The Journal of Physical Chemistry C 115 (34), 17184-17189, 2011

Lateral Photocurrent Scanning of Donor and Acceptor Polymers on Graphene Coated Substrates 2011 S Mukhopadhyay, R Voggu, CNR Rao, NS Vidhyadhiraja, K S Narayan, Japanese Journal of Applied Physics 50 (6R), 061602

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