

PATENTS

1. Method to synthesize water soluble anionic conjugated polymers. **Iyer, P. K.**; Dwivedi, A. K.; Saikia, G.; (Complete specification of US patent filed through TIFAC-DST)
2. Method for analysis and detection of biologically important cations and anions in aqueous phase and competitive biological environment. **Iyer, P. K.**; Dwivedi, A. K.; Saikia, G.; (Complete specification of US patent filed through TIFAC-DST)
3. Method for the optical detection of aspirin in water. **Iyer, P. K.**; Dwivedi, A. K.; Saikia, G.; (Complete specification of US patent filed through TIFAC-DST)
4. Aqueous-phase, phase-transfer alkylation of fluorene for manufacture of optical-quality 9,9-dialkylfluorene polymers. **Iyer, P. K.**; Sarmah, P. J.; Saikia, G.; Thapa, P. Indian Pat. Appl. (2010), 19pp. CODEN: INXXBQ IN 2008KO02228 A 20100702 **Patent application No. 2228/KOL/2008.** (Complete specification of US patent filed through TIFAC-DST)
5. Methods and devices for utilizing soluble conjugated polymers. Bazan, G.C.; Heeger, A.J.; **Iyer, P.K.**; Liu, B. **PCT Int. Appl. (2006), 54 pp. WO 2006029226 (UC Case No. 2004-296-1)**
6. A process for the preparation of novel chiral salen transition metal catalyst useful in enantioselective epoxidation of prochiral olefins. Kureshy, R. I.; Khan, N. H.; Abdi, S.H.R.; **Iyer, P. K.**; Patel, S.T.; Jasra, R. V. **Indian (2006), IN 2000DE01160.**
7. Method to synthesize nano sized zinc oxide. **Iyer, P.K.**; Giri, P.K.; Bhattacharya, S.; Chetia, B. (**India Patent application no. 563/K01/2006**) **Indian Pat. Appl. (2007), 12pp. CODEN: INXXBQ IN 2006KO00563**
8. Soluble conjugated polymers. Bazan, G.C.; Heeger, A.J.; **Iyer, P.K.**; Liu, B.; Gong, X.; Ma, W. U. S. **Patent Appl. 11/221,123.** (UCSB Specification filed on Sept 06, 2005)
9. A process for the preparation of novel chiral catalyst useful in preparation of chirally enriched epoxides. Kureshy, R.I.; Khan, N.H.; Abdi, S.H.R.; **Iyer, P.K.**; Patel S.T.; Gomkale, S.D.; Bhatt, A.K. **Indian (2004) 41 pp. Patent No. IN 192294.**
10. Process for the preparation of chiral epoxides from prochiral alkenes in a biphasic solvent in the presence of novel chiral catalysts. Kureshy, R.I.; Khan, N.H.; Abdi, S.H.R.; **Iyer, P.K.**; Patel, S.T.; Gomkale, S.D.; Bhatt, A.K. **Indian (2003), 21pp. IN 191242.**
11. An improved process for the preparation of chiral epoxides useful as intermediates in the synthesis of chiral drugs. Kureshy, R.I.; Khan, N.H.; Abdi, **Iyer, P.K.**; S.H.R.; Patel S.T.; Jasra, R.V. (**CSIR-India Patent DEL 1161/2000**) **Indian Patent pending.**

PUBLICATIONS

2017

1. Tanwar, A. S.; **Iyer, P. K.*** Fluorescence “Turn-On” indicator displacement assay based sensing of nitroexplosive 2,4,6-trinitrophenol in aqueous media via a polyelectrolyte and dye complex. (Revision) (2017), 2, XXXX-XXXX.
2. Bhim Raju, T.; Vaghasiya, J. V.; Afroz, M. A.; Soni, S. S.;* **Iyer, P. K.*** Twisted donor substituted simple thiophene dyes retard the dye aggregation and charge recombination in dye-sensitized solar cells. (Revision) (2017), 2, XXXX-XXXX.
3. Meher, N.; **Iyer, P. K.*** Pendant chain engineering to fine-tune the nanomorphologies and solid state luminescence of naphthalimide AIEEgens: application to phenolic nitro-explosive detection in water. *Nanoscale* (2017), 9 (22), 7674-7685.
4. Singh, A.; Dey, A.; Das, D.; **Iyer, P. K.*** Combined Influence of Plasmonic Metal Nanoparticle and Dual Cathode Buffer Layer for Highly Efficient rrP3HT:PCBM Based Bulk Heterojunction Solar Cell. *J. Mater. Chem. C*, (2017), 5, DOI: 10.1039/c7tc01621b
5. Sahu, T. K.; Arora, S.; Banik, A.; **Iyer, P. K.**; Qureshi, M.* Efficient and Rapid Removal of Environmental Malignant Arsenic(III) and Industrial Dyes Using Re-usable, Recoverable Ternary Iron Oxide–ORMOSIL–Graphene Oxide Composite. *ACS Sust. Chem. Eng.* (2017), 5, DOI: 10.1021/acssuschemeng.7b00632
6. Vasimalla, S.; Subbarao, N. V. V.; Gedda, M.; Goswami, D. K.; **Iyer, P. K.*** Effects of Dielectric Material, HMDS Layer, and Channel Length on the Performance of the Perylenediimide-Based Organic Field-Effect Transistors. *ACS Omega*, (2017), 2, 2552-2560.
7. Muthuraj, B.; Mukherjee, S.; Chowdhury, S. R.; Patra, C.;* **Iyer, P. K.*** An Efficient Strategy to Assemble Water Soluble Histidine-Perylene Diimide and Graphene Oxide for the Detection of PPI in Physiological conditions and in vitro. *Biosen. Bioelect.* (2017), 89, 636-644. DOI:10.1016/j.bios.2015.12.036. (**This work is highlighted in [Atlas of Science](#)**)

8. Dey, A.; Singh, A.; Das, D.; **Iyer, P. K.*** High Performance ZnPc Thin Film based Photo-Sensitive Organic Field Effect Transistors: Influence of Multilayer Dielectric Systems and Thin Film Growth Structure. *ACS Omega*, (2017), 2, 1241-1248. DOI: 10.1021/acsomega.7b00094
9. Malik, A. H.; **Iyer, P. K.*** Conjugated Polyelectrolyte Based Sensitive Detection and Removal of Antibiotics Tetracycline from Water. *ACS Appl. Mater. Interfaces*, (2017), 9, 4433-4439.
10. Das, D.; Gopikrishna, P.; Singh, A.; Dey, A.; **Iyer, P. K.*** Solution Processed WPLEDs with Good Color Stability and High Color Rendering Index via a Phosphor-Sensitized System. *ChemistrySelect*, (2017), 2, 3184-3190. DOI: 10.1002/slct.201700254.
11. Gupta, R. K.; Das, D.; Gupta, M.; Pal, S. K.; **Iyer, P. K.*** Achalkumar, A. S.* Electroluminescent room temperature columnar liquid crystals based on bay-annulated perylene tetraesters. *J. Mater. Chem. C*, (2017), 5, 1767-1781.
12. Sharma, B.; Singh, A.; Afroz, M. A.; **Iyer, P. K.;*** Jacob, J.* Direct arylation polymerization approach for the synthesis of narrow band gap cyclopentadithiophene based conjugated polymer and its application in solar cell devices. *Syn. Met.*, (2017), 226, 56-61.

2016

13. Das, D.; Gopikrishna, P.; Narasimhan, R.; Singh, A.; Dey, A.; **Iyer, P. K.*** White Polymer Light Emitting Diodes based on PVK: Effect of Electron Injection Barrier on Transport Property, Electroluminescence and Controlling the Electroplex Formation. *Phys. Chem. Chem. Phys.*, (2016), 18, 33077-33084. DOI: 10.1039/C6CP07092B
14. Muthuraj, B.; Mukherjee, S.; Patra, C.;; **Iyer, P. K.*** Amplified Fluorescence from Polyfluorene Nanoparticles with Aggregation-Induced Enhanced Emission for Live Cell Imaging and Cancer Theranostics. *ACS Appl. Mater. Interfaces* (2016), 8, 32220–32229. DOI: 10.1021/acsami.6b11373
15. Dey, A.; Singh, A.; Das, D.; **Iyer, P. K.*** Photosensitive Organic Field Effect Transistor: Influence of ZnPc Morphology and Bilayer Dielectrics to Achieve Low Operating Voltage and Low Bias Stress Effect. *Phys. Chem. Chem. Phys.*, (2016), 18, 32602-32609. DOI: 10.1039/C6CP06481G
16. Bhim Raju, T.; Vaghasiya, J. V.; Afroz, M. A.; Soni, S. S. and Iyer, P. K.* Influence of m-fluorine Substituted Phenylene Spacer Dyes in Dye-sensitized Solar Cells. *Org. Elect.*, (2016), 39, 371-379. DOI: 10.1016/j.orgel.2016.10.024.
17. Bhim Raju, T.; Vaghasiya, J. V.; Afroz, M. A.; Soni, S. S. and **Iyer, P. K.*** Design, synthesis and DSSC performance of o-fluorine substituted phenylene spacer sensitizers: Effect of TiO₂ thickness variation. *Phys. Chem. Chem. Phys.*, (2016), 18, 28485-28491. DOI: 10.1039/c6cp05641e
18. Gopikrishna, P.; **Iyer, P. K.*** Mono-Substituted Dibenzofulvene-based Luminogens: Aggregation-Induced Emission Enhancement and Dual-State Emission. *J. Phys. Chem. C*, (2016), 120(XX), 26556–26568. DOI: 10.1021/acs.jpcc.6b09689
19. Kalita, A.; Hussain, S.; Malik, A. H.; Barman, U.; Goswami, N.; **Iyer, P. K.*** Anion exchange induced strong π - π interactions in single crystalline naphthalene diimide for nitroexplosive sensing: An electronic prototype for visual on-site detection. *ACS Appl. Mater. Interfaces*, (2016), 8(38), 25326–25336. DOI: 10.1021/acsami.6b08751.
20. Meher, N.; Chowdhury, S. R.; **Iyer, P. K.*** Aggregation Induced Emission Enhancement and Growth of Naphthalimide Nanoribbons via J-Aggregation: Insight into Disaggregation Induced Unfolding and Detection of Ferritin at Nanomolar Level. *J. Mater. Chem. B*, (2016), 4, 6023-6031. DOI: 10.1039/C6TB01746K.
21. Hussain, S.; Malik, A. H.; **Iyer, P. K.*** FRET-assisted selective detection of flavins via cationic conjugated polyelectrolyte under physiological conditions. *J. Mater. Chem. B*, (2016), 4, 4439-4446. DOI: 10.1039/C6TB01350C
22. Vasimalla, S.; Subbarao, N. V. V.; Iyer, P. K.* Low voltage, low cost, flexible and balanced ambipolar OFETs based on Br2PTCDI-C18/CuPc fabricated on an Al foil gate substrate with good ambient stability. *J. Mater. Chem. C*, (2016), 4, 7102-7109. DOI: 10.1039/C6TC02315K.
23. Tanwar, A. S.; Hussain, S.; Malik, A. H.; Afroz, M. A.; **Iyer, P. K.*** Inner Filter Effect Based Selective Detection of Nitroexplosive-Picric Acid in Aqueous Solution and Solid Support Using Conjugated Polymer. *ACS Sens.*, (2016), 1, 1070–1077. DOI: 10.1021/acssensors.6b00441.
24. Chowdhury, S. R.; Agarwal, M.; Meher, N.; Muthuraj, B.; **Iyer, P. K.*** Modulation of Amyloid Aggregates into Nontoxic Coaggregates by Hydroxyquinoline Appended Polyfluorene. *ACS Appl. Mater. Interfaces*, (2016), 8, 13309–13319. DOI: 10.1021/acsami.6b03668

25. Malik, A. H.; Hussain, S.; **Iyer, P. K.*** Aggregation-Induced FRET via Polymer–Surfactant Complexation: A New Strategy for the Detection of Spermine. *Anal. Chem.* (2016), 88, 7358–7364. DOI: 10.1021/acs.analchem.6b01788
26. Singh, A.; Dey, A.; Das, D.; **Iyer, P. K.*** Effect of Dual Cathode Buffer Layer on the Charge Carrier Dynamics of rrP3HT:PCBM Based Bulk Heterojunction Solar Cell. *ACS Appl. Mater. Interfaces* (2016), 8(17), 10904–10910. DOI: 10.1021/acsami.6b03102.
27. Das, D.; Gopikrishna, P.; Singh, A.; Dey, A.; **Iyer, P. K.*** Influence of emissive layer thickness on electrical characteristics of polyfluorene copolymer based polymer light emitting diodes. *Journal of Physics* (2016), 704, 012016.
28. Dey, A.; Singh, A.; Kalita, A.; Das, D.; **Iyer, P. K.*** High Performance, Low Operating Voltage n-Type Organic Field Effect Transistor Based on Inorganic–Organic Bilayer Dielectric System. *Journal of Physics* (2016), 704, 012017.
29. Kalita, A.; Dey, A.; **Iyer, P. K.*** Effect of inorganic/organic dual dielectric layer on the morphology and performance of n-channel OFETs. *Phys. Chem. Chem. Phys.*, (2016), 18, 12163-12168. DOI: 10.1039/C6CP01087C.
30. Das, D.; Gopikrishna, P.; Singh, A.; Dey, A.; **Iyer, P. K.*** Efficient blue and white polymer light emitting diodes based on a well charge balanced, core modified polyfluorene derivative. *Phys. Chem. Chem. Phys.*, (2016), 18(3), 7389-7394.
31. Subbarao, N. V. V.; Gedda, M.; **Iyer, P. K.*** Goswami, D. K.* Organic Field-Effect Transistors as High Performance Humidity Sensors with Rapid Response, Recovery Time and Remarkable Ambient Stability. *Org. Elect.*, (2016), 17(32), 169-178.
32. Ravibabu, V.; Hussain, S. **Iyer, P. K.**; Pugazhenth, G. ;* Katiyar, V.*
33. Non-isothermal crystallization kinetics of sucrose palmitate reinforced poly(lactic acid) bionanocomposites. *Polym. Bull.*, (2016), 71(1), 21-38. DOI 10.1007/s00289-015-1468-3.

2015

34. Malik, A.; Hussain, S.; Kalita, A.; **Iyer, P. K.*** Conjugated polymer nanoparticles for the amplified detection of nitro-explosive picric acid on multiple platforms. *ACS Appl. Mater. Interfaces* (2015), 7, 26968–26976. DOI: 10.1021/acsami.5b08068.
35. Soni, S. S. ;* Fadadu, K. B.; Vaghasiya, J. V. Solanki, B. G.; Sonigara, K. K. Singh, A.; Das, D.; **Iyer, P. K.*** Improved Molecular Architecture of D- π -A Carbazole Dyes: 9% PCE with Cobalt Redox Shuttle in Dye Sensitized Solar Cells. *J. Mater. Chem. A*, (2015), 3, 21664-21671. DOI: 10.1039/C5TA06548H.
36. Kalita, A.; Hussain, S.; Malik, A. H.; Subbarao, N. V. V.; **Iyer, P. K.*** Selective Detection of Ammonia Vapors via Solution Processed Histidine Functionalized Perylene Diimide Thin Film Device. *J. Mater. Chem. C*, (2015), 3, 10767-10774. DOI 10.1039/C5TC02521D.
37. Muthuraj, B.; Layek, S.; Trivedi, V. ;* **Iyer, P. K.*** Multiple Function Fluorescein Probe Performs Metal Chelation, Disaggregation and Modulation of Aggregated A β and A β -Cu Complex. *ACS Chemical Neuroscience*, (2015), 6, 1880-1891. DOI: 10.1021/acschemneuro.5b00205.
38. Muthuraj, B.; Chowdhury, S. R.; **Iyer, P. K.*** Modulation of Amyloid- β Fibrils into Mature Micro Rod-shaped Structure by Histidine Functionalized Water-soluble Perylene Diimide. (2015), *ACS Appl. Mater. Interfaces* (2015), 7, 21226–21234. DOI: 10.1021/acsami.5b07260.
39. Gopikrishna, P.; Das, D.; and **Iyer, P. K.*** Synthesis and characterization of color tunable, highly electroluminescent copolymers of polyfluorene by incorporating the N-phenyl-1,8-naphthalimide moiety into the main chain. *J. Mater. Chem. C*, (2015), 3, 9318-9326.
40. Ravibabu, V.; Hussain, S. **Iyer, P. K.**; Pugazhenth, G. ;* Katiyar, V.* Influence of graphene on thermal degradation and crystallization kinetics behaviour of poly(lactic acid). *J. Polym. Res.* (2015), DOI: 10.1007/s10965-015-0823-2.
41. Dar, A. A.; Hussain, S.; Dutta, D.; **Iyer, P. K.** ;* Khan, A.T.* One-pot synthesis of functionalized 4-hydroxy-3-thiomethylcoumarins: Detection and discrimination of Co²⁺ and Ni²⁺ ions. *RSC Advances*, (2015), 5, 57749-57756.
42. Malik, A. H.; Hussain, S.; Tanwar, A.; Layek, S.; Trivedi, V. ;* **Iyer, P. K.*** Anionic conjugated polymer as a multi-action sensor for the sensitive detection of Cu²⁺, PPI, real-time ALP assaying and cell imaging. *Analyst*, (2015), 140(13), 4388-4392.

43. Kalita, A.; Subbarao, N. V. V.; **Iyer, P. K.*** Large-Scale Molecular Packing and Morphology Dependent High Performance Organic Field-Effect Transistor by Symmetrical Naphthalene-Diimide Appended with Methyl Cyclohexane. *J. Phys. Chem. C*, (2015), 119(22), 12772-12779.
44. Hussain, S.; Malik, A. H.; Afroz, A. M.; **Iyer, P. K.*** Ultrasensitive Detection of Nitro Explosive-Picric Acid via Conjugated Polyelectrolyte in Aqueous Media and Solid Support. *Chem. Commun.* (2015), 51, 7207-7210.
45. Muthuraj, B.; Chowdhury, S. R.; Mukherjee, S.; Patra, C.;* **Iyer, P. K.*** Aggregation Deaggregation Influenced Ultrasensitive detection of Cu²⁺ and ATP by Histidine Functionalized Water-Soluble Fluorescent Perylene Diimide under Physiological Conditions and in Living Cells. *RSC Advances*, (2015), 5, 28211-28218.
46. Hussain, S.; Malik, A. H.; **Iyer, P. K.*** Highly Precise Detection, Discrimination, and Removal of Anionic Surfactants over the Full pH Range via Cationic Conjugated Polymer: An Efficient Strategy to Facilitate Illicit-Drug Analysis. *ACS Appl. Mater. Interfaces* (2015), 7, 3189-3198.
47. Goutam, P. J.; **Iyer, P. K.** Selective detection of resorcinol using a bis(benzothiazol-2-yl)pyridine based ditopic receptor. *Sensors and Actuators B* (2015) 211, 263-267.
48. Dey, A.; Singh, A.; Das, D.; Iyer, P. K.; Organic semiconductors: A new future of nanodevices and applications (Book Chapter), *Thin Film Structures in Energy Applications*, 1 January 2015, Pages 97-128.
49. Subbarao, N.V.V.; Gedda, M.; **Iyer, P.K.**,* Goswami, D. K.* Enhanced environmental stability induced by effective polarization of a polar dielectric layer in a trilayer dielectric system of organic field-effect transistors: A quantitative study. *ACS Appl. Mater. Interfaces* (2015), 7, 1915-1924.

2014

50. Dey, A.; Kalita, A.; **Iyer, P. K.*** High performance n-channel organic thin film transistor based on naphthalene diimide. *ACS Appl. Mater. Interfaces* (2014), 6(15), pp 12295–12301.
51. Vasimalla, S.; Senanayak, S.; Sharma, M.; Narayan, K. S.;* **Iyer, P. K.*** Improved Performance of Solution-Processed n-Type Organic Field-Effect Transistors by Regulating the Intermolecular Interactions and Crystalline Domains on Macroscopic Scale. *Chem. Mater.* (2014), 26, 4030-4037. DOI: 10.1021/cm501780p
52. Raju, T. B.; Gopikrishna, P.; Iyer, P. K.* Highly efficient and facile alkylation of 4H-cyclopenta-[2,1-b:3,4-b']dithiophene in water. *RSC Advances*, (2014), 4, 37738-37745.
53. Gedda, M.; Subbarao, N. V. V.; Vasimalla, S.; **Iyer, P. K.**,* Goswami, D. K.* Effect of thickness of bi-layer dielectric on 1,7-Dibromo-N,N'-Dioctadecyl-3,4,9,10-perylenetetracarboxylic diimide based organic field-effect transistors. *Physica Status Solidi A: Applications and Materials Science* (2014) 1–9, DOI 10.1002/pssa.201431304
54. Chetia, B.; **Iyer, P. K.*** Selective fluoride anion sensing by simple benzimidazolyl based ligand. *Sensors and Actuators B* (2014), 2013, 191–195. doi:10.1016/j.snb.2014.04.088.
55. Dwivedi, A. K.; **Iyer, P. K.*** Therapeutic Strategies to Prevent Alzheimer Disease Pathogenesis Using Fluorescent Conjugated Polyelectrolyte. *Macromolecular Bioscience* (2014) 14, 508-514. DOI: 10.1002/mabi.201300107. (Chosen to appear as VIP paper)
56. Dar, A. A.; Ali, S.; Ghosh, A.; Khan, A. T.; Dwivedi, A. K.; **Iyer, P. K.*** Synthesis of unsymmetrical sulfides catalyzed by n-tetrabutyl-ammonium tribromide: A selective fluorescence probe for mercury ion. *Sensors and Actuators B* (2014), 193, 509–514.
57. Gedda, M.; Subbarao, N. V. V.; Vasimalla, S.; Dey, A.; **Iyer, P. K.**; Goswami, D. K.* Growth and characterization of N, N'-dioctadecyl-1, 7-dibromo-3, 4, 9, 10-perylenetetracarboxylic-diimide micron/nano wires for organic field effect transistors. *AIP Conf. Proc.* (2014), 1576, 42-45; doi: 10.1063/1.4861975.
58. Ratha, R.; Goutam, P. J.; **Iyer, P. K.*** Photo stability enhancement of Poly(3-hexylthiophene)-PCBM nanocomposites by addition of multi walled carbon nanotubes under ambient conditions. *Org. Elect.*, (2014), 15(7), 1650–1656. <http://dx.doi.org/10.1016/j.orgel.2014.03.015>.
59. Muthuraj, B.; Deshmukh, R.; Trivedi, V.;* **Iyer, P. K.*** A highly selective probe detects Cu²⁺ and endogenous NO gas in living cell. *ACS Appl. Mater. Interfaces* (2014), 6, 6562-6569. DOI: 10.1021/am501476w.

2013

60. Hussain, S.; De, S., **Iyer, P. K.** Thiazole-Containing Conjugated Polymer as a Visual and Fluorometric Sensor for Iodide and Mercury. *ACS Appl. Mater. Interfaces* (2013), 5, 2334-2340.
61. Dwivedi, A. K.; **Iyer, P. K.** Sensitive Detection of Acid Phosphatase Enzyme and Screening of Inhibitors Using Anionic Polyfluorene Derivatives. *Anal. Methods*, (2013), 5(9), 2374-2378.
62. Chetia, B.; Goutam, P. J.; Chipem, F.; **Iyer, P. K.** Thiourea recognition by 2,6-bis(2-benzimidazolyl)pyridine. Insights from spectroscopic techniques and DFT. *J. Mol. Structure*, (2013), 1042, 32-36.
63. Dwivedi, A. K.; **Iyer, P. K.** A Fluorescence Turn on Trypsin Assay Based on Aqueous Polyfluorene. *J. Mater. Chem. B* (2013), 1, 4005-4010.
64. Muthuraj, B.; Hussain, S.; **Iyer, P. K.** A rapid and sensitive detection of ferritin in nanomolar level and disruption of amyloid β fibrils using fluorescent conjugated polymer. *Polymer Chemistry* (2013), 4, 5096-5107. (**Polymer Chemistry - Author of the week and Paper of the week**)
65. Goutam, P. J.; Chetia, B.; Chipem, F.; **Iyer, P. K.** Self Assembling Metallo-supramolecular Polymer and Foldamer Gels formation Assisted by Alkali and Transition Metal Salts. (Communicated)
66. Goutam, P. J.; Chetia, B.; **Iyer, P. K.** Guest Selective Recognition of Resorcinol by 1,6-bis(2,6-di(benzo[d]thiazol-2-yl)pyridin-4-yloxy)hexane. (Communicated)
67. Chetia, B.; **Iyer, P. K.** Highly selective fluoride recognition by 1,3-bis(5,6-dimethyl-1H-benzo[d]imidazol-2-yl)benzene. (Communicated)

2012

68. Dwivedi, A. K.; Prasad, K. M. N.; Trivedi, V.; Iyer, P. K. Interaction of heme proteins with anionic polyfluorene: Insights into physiological effects, folding events and inhibition activity. *ACS Appl. Mater. Interfaces* (2012), 4, 6371-6377. (**Selected by Global Medical Discovery as article of special interest to the drug development sector**)
69. Saikia, G.; Dwivedi, A. K.; **Iyer, P. K.** Development of Solution, Film and Membrane Based Fluorescent Sensor for the Detection of Fluoride Anions from Water. *Anal. Methods*, (2012), 4, 3180-3186. (**Selected as Hot Article in Third Quarter of 2012**)
70. Giri, P. K.; Bhattacharyya, S.; Chetia, B.; Kumari, S.; Singh, D. K.; **Iyer, P. K.** High-Yield Chemical Synthesis of Hexagonal ZnO Nanoparticles and Nanorods with Excellent Optical Properties. *J. Nanosci. Nanotechnol.* (2012), 12, 201-206.
71. Goutam, P. J.; Singh, D. K.; **Iyer, P. K.** Nature of Photoluminescence quenching of Poly(3-hexylthiophene) by Carbon nanotubes. *J. Phys. Chem. C*, (2012), 116(14), 8196-8201.
72. Singh, D. K.; **Iyer, P. K.**; Giri, P. K. Distinguishing Defect Induced Intermediate Frequency Modes from Combination Modes in Raman Spectrum of Single Walled Carbon Nanotubes. *J. Appl. Phys.*, (2012), 111(6), 064304/1-064304/10.
73. Singh, D. K.; Giri, P. K.; **Iyer, P. K.** Role of molecular interactions and structural defects in the efficient fluorescence quenching by Carbon Nanotubes. *Carbon* (2012), 50, 4495-4505.
74. Kakati, K.; Pugazhenthii, G.; **Iyer, P. K.** Effect of Organomodified Ni-Al Layered Double Hydroxide (OLDH) on the Properties of polypropylene (PP)/LDH Nanocomposites. *Int. J. Polym. Mat.*, (2012), 61(12), 931-948.

2011

75. Dwivedi, A. K. Saikia, G.; **Iyer, P. K.** Neutral Conjugated Polymer Demonstrates Remarkable Activity as Non-invasive Sensor for Inorganic Phosphate Detection. *Polymer Preprints* (American Chemical Society, Division of Polymer Chemistry) (2011), 52(2), 963-964.
76. Singh, D. K.; Giri, P. K.; **Iyer, P. K.** Evidence for Defect-enhanced Photoluminescence Quenching of Fluorescein by Carbon Nanotubes. *J. Phys. Chem. C*, (2011), 115, 24067-24072.
77. Singh, D. K.; **Iyer, P. K.**; Giri, P. K. Improved chemical synthesis of graphene using a safer solvothermal route. *International Journal of Nanoscience*, (2011), 10(1/2), 39-42.
78. Singh, D. K.; **Iyer, P. K.**; Giri, P. K. Defect evolution and structural improvement in low energy ion irradiated carbon nanotubes: Microscopic and spectroscopic studies. *International Journal of Nanoscience*, (2011), 10(1/2), 49-53.
79. Saikia, G.; Iyer, P. K. A remarkable superquenching and superdequenching sensor for the selective and non-invasive detection of inorganic phosphates in saliva. *Macromolecules*, (2011), 44, 3753-3758.
80. Chetia, B.; **Iyer, P. K.** Acetate recognition by 2,6-bis(2-benzimidazolyl)pyridine. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* (2011), 81(1), 313-316.

81. Goutam, P. J.; Singh, D. K.; Giri, P. K.; **Iyer, P. K.** Enhancing the Photostability of Poly(3-hexylthiophene) by Preparing Composites with Multiwalled Carbon Nanotubes. *J. Phys. Chem. B*, (2011) 115, 919-924.
82. Dwivedi, A. K.; Saikia, G.; **Iyer, P. K.** Aqueous polyfluorene probe for the detection and estimation of Fe³⁺ and inorganic phosphate in blood serum. *J. Mater. Chem.*, (2011), 21, 2502-2507. (**Appeared as Journal Inside Cover Picture**)

2010

83. Saikia, Gunin; Murugadoss, A.; Sarmah, P. J.; Chattopadhyay, A.; **Iyer, P. K.** Tuning the Optical Characteristics of Poly(p-phenylenevinylene) by in Situ Au Nanoparticle Generation. *J. Physical Chemistry B* (2010), 114(46), 14821-14826.
84. Padhy, A. K.; Chetia, B.; Mishra, S.; Pati, A.; **Iyer, P. K.** Imidazole derivatives as the organic precursor of ZnO nano particle. *Tetrahedron Lett.* (2010), 51(20), 2751-2753.
85. Saikia, G.; **Iyer, P. K.** Facile C-H Alkylation in Water: Enabling Defect-Free Materials for Optoelectronic Devices. *J. Org. Chem.* (2010), 75(8), 2714-2717.
86. Singh, D. K.; **Iyer, P. K.**; Giri, P. K. Diameter dependence of oxidative stability in multiwalled carbon nanotubes: Role of defects and effect of vacuum annealing. *J. Appl. Phys.* (2010), 108(8), 084313/1-084313/10.
87. Singh, Dilip K.; **Iyer, P. K.**; Giri, P. K. Diameter dependence of interwall separation and strain in multiwalled carbon nanotubes probed by X-ray diffraction and Raman scattering studies. *Diamond and Related Materials* (2010), 19(10), 1281-1288.

2009

88. Reddy, P. K.; Goutam, P. J.; Singh, D. K.; Ghoshal, A. K.; **Iyer, P. K.** Mechanistic investigation, kinetic modeling and analysis parameters of poly(3-hexylthiophene) degradation to fullerenes. *Poly. Degrad. Stability* (2009), 94(10), 1839-1848.
89. Singh, D. K.; **Iyer, P. K.**; Giri, P. K. Quantitative Analysis of Diameter Dependent Properties of Multi-walled Carbon Nanotubes. *AIP Conference Proceedings* (2009), 1147 (Transport and Optical Properties of Nanomaterials), 450-456.
90. Singh D. K; **Iyer P. K.**; Giri, P. K. Optical signature of structural defects in single walled and multiwalled carbon nanotubes. *J. Nanosci. Nanotech.* (2009), 9(9), 5396-5401.
91. Saikia, G.; Singh, R.; Sarmah, P. Jyoti; Akhtar, M. W.; Sinha, J.; Katiyar, M.; **Iyer, P. K.** Synthesis and Characterization of Soluble Poly(p-phenylene) Derivatives for PLED Applications. *Macromol. Chem. Phys.* (2009), 210(24), 2153-2159.

2008

92. Singh, D. K.; **Iyer, P. K.**; Giri, P. K. Functionalization of carbon nanotubes and study of its optical and structural properties. *NanoTrends* (2008), 4(1), 55-58.
93. Giri, P. K.; Bhattacharyya, S.; Chetia, B.; Panigrahi, B. K.; Nair, K. G. M.; **Iyer, P. K.** Novel low temperature chemical synthesis and characterization of zinc oxide nanostructures. *J. Nanosci. Nanotech.* (2008), 8(8), 4290-4294.
94. Morya, N.; **Iyer, P. K.**; Moholkar, V. A physical insight into sonochemical emulsion polymerization with cavitation bubble dynamics. *Polymer* (2008), 49, 1910-1925.
95. Singh, A.; Chetia, B.; Mobin, S. M.; Das G.; **Iyer, P. K.**; Mondal, B. Ruthenium monoterpyridine complexes with 2,6-bis(benzimidazol-2-yl)pyridine: Synthesis, Spectral properties and structure. *Polyhedron* (2008), 27, 1983-1988.
96. Singh, D. K.; **Iyer P. K.**; Giri, P. K. Study of fluorescence quenching effect of Carbon Nanotubes. *Proceedings of the DAE Solid State Physics Symposium* (In Press-2008)
97. Chetia, B.; **Iyer, P. K.** 2,6-Bis(2-benzimidazolyl)pyridine as a chemosensor for fluoride ions. *Tetrahedron Lett.* (2008), 49(1), 94-97.
98. Gouri, S. P.; Sarmah, P. J.; **Iyer, P. K.**; Agarwal, P. Synthesis and study of CdS nanoparticles doped Poly (1, 4-dihexyloxybenzene). *Macromol. Chem. Phys.*, (2008), 209(4), 417-423.
99. Giri, P. K.; Bhattacharyya, S.; Chetia, B.; Panigrahi, B. K.; Nair, K.G. M.; **Iyer, P. K.** Novel low temperature chemical synthesis and characterization of zinc oxide nanostructures. *J. Nanosci. Nanotech.* (2008), 8, 1-5.

100. Singh, D. K.; **Iyer, P. K.**; Giri, P. K. Functionalization of carbon nanotubes and study of its optical and structural characteristics. *Nanotrends: J. Nanotech. Appl.* (2008), 55-58.

2007

101. Chetia, B.; **Iyer, P. K.** Utilization of 2,6-Bis(2-benzimidazolyl) pyridine to detect toxic benzene metabolites *Tetrahedron Lett.* (2007), 48(1), 47-50.

2006

102. Chetia, B.; **Iyer, P. K.** 2,6-Bis(2-benzimidazolyl) pyridine receptors for urea recognition. *Tetrahedron Lett.* (2006), 47(46), 8115-8117.
103. Knapton, D.; **Iyer, P. K.**; Rowan, S. J.; Weder, C. Synthesis and Properties of Metallo-Supramolecular Poly(*p*-xylylene)s. *Macromolecules*, (2006), 39, 4069-4075.
104. **Iyer, P. K.**; Wang, S. A cationic tetrahedral chromophores for amplified DNA detection. *Tetrahedron Lett.* (2006), 47(4), 437-439.

2005

105. Ma, W.; **Iyer, P. K.**; Gong, X.; Liu, B.; Moses, D.; Bazan, G. C.; Heeger, A. J.; Water/methanol-soluble conjugated copolymer as an electron-transport layer in polymer light-emitting diodes. *Advanced Materials*, (2005), 17(3), 274-277.
106. **Iyer, P. K.**; Beck, J. B.; Weder, C.; Rowan, S. J. Synthesis and optical properties of metallo-supramolecular polymers. *Chemical Communications* (2005), 3, 319-321.

2004

107. Bussian, D. A.; Summers, M. A.; **Iyer, P.**; Liu, B.; Bazan, G. C.; Buratto, S. K. Single molecule spectroscopy of tetrahedral oligomeric organic semiconductors. *Polym. Mater. Sci. Engg.*, (2004), 90, 615-616.

2003

108. Gong, X.; **Iyer, P. K.**; Moses, D.; Xiao, S. S.; Bazan, G. C.; Heeger, A. J. Stabilized Blue Emission from Polyfluorene-based Light Emitting Diodes: Elimination of Fluorenone Defects. *Advanced Functional Materials*, (2003), 4(13), 325-330.

2002

109. Simkhovich, L.; **Iyer, P.**; Goldberg, I.; Gross, Z. Structure and chemistry of N-substituted corroles and their rhodium(I) and zinc(II) metal-ion complexes. *Chemistry-A European. J.* (2002), 8(11), 2595-2601.
110. Kureshy, R. I.; Khan, N. H.; Abdi, S. H. R.; Patel, S. T.; **Iyer, P.**; Subramanian, P. S.; Jasra, R. V. A highly potential analogue of Jacobsen Catalyst with in-built phase transfer capability in enantioselective epoxidation of non-functionalized alkenes. *J. of Catalysis*. (2002), 209 (1), 99-104.
111. Kureshy, R. I.; Khan, N. H.; Abdi, S. H. R.; Patel, S. T.; **Iyer, P.**; Jasra, R. V. Enantioselective epoxidation of chromenes using chiral Mn(III) salen catalysts with in-built phase transfer capability. *Tetrahedron Lett.* (2002), 43(14), 2665-2668.

2000

112. Kureshy, R. I.; Khan, N. H.; Abdi, S. H. R.; Patel, S. T.; **Iyer, P.**; Suresh, E.; Dastidar, P. Chiral Ni(II) Schiff base complex-catalysed enantioselective epoxidation of prochiral non-functionalised alkenes. *J. Mol. Catal. A: Chem.* (2000), 160(2), 217-227.

1999

113. Kureshy, R. I.; Khan, N. H.; Abdi, S. H. R.; **Iyer, P.**; Patel, S. T. Chiral Mn(III) Schiff base complex catalyzed aerobic enantioselective epoxidation of prochiral non-functionalized olefins. *Polyhedron* (1999), 18(12), 1773-1777.

114. Kureshy, R. I.; Khan, N. H.; Abdi, S. H. R.; Patel S. T.; **Iyer, P.** Synthesis, Physicochemical studies and solvent dependent enantioselective epoxidation of 1,2 dihydronaphthalene catalyzed by Ru(II) Schiff base complexes I. *J. Mol. Catal. A: Chem.* (1999) 150(1-2), 163-173.
115. Kureshy, R. I.; Khan, N. H.; Abdi, S. H. R.; Patel S.T.; **Iyer, P.** Chiral Ru(II) Schiff base complexes catalyzed enantioselective epoxidation of styrene derivatives using iodossyl benzene as oxidant II. *J. Mol. Catal. A: Chem.* (1999) 150(1-2), 175-183.

1998

116. Kureshy, R. I.; Khan, N. H.; Abdi, S. H. R.; **Iyer, P.**; Bhatt, A. K. Aerobic, enantioselective epoxidation of non-functionalized olefins catalyzed by Ni(II) chiral Schiff base complexes. *J. Mol. Catal. A: Chem.* (1998), 130(1-2), 41-50.

1997

117. Kureshy, R. I.; Khan, N. H.; Abdi, S. H. R.; **Iyer, P.** Synthesis of catalytically active polymer-bound Mn(III) salen complexes for enantioselective epoxidation of styrene derivatives. *React. Funct. Polym.* (1997), 34(2/3), 153-160.
118. Kureshy, R. I.; Khan, N. H.; Abdi, S. H. R.; **Iyer, P.** Chiral Ru(III) metal complex-catalyzed aerobic enantioselective epoxidation of styrene derivatives with co-oxidation of aldehyde. *J. Mol. Catal. A: Chem.* (1997), 124(2-3), 91-97.
119. Kureshy, R. I.; Khan, N. H.; Abdi, S. H. R.; Bhatt, A. K.; **Iyer, P.** Synthesis, physicochemical studies and aerobic enantioselective epoxidation of non functionalized olefins catalyzed by new Co(II) chiral salen complexes. *J. Mol. Catal. A: Chem.* (1997), 121(1), 25-31.
120. Kureshy, R. I.; Khan, N. H.; Abdi, S. H. R.; **Iyer, P.**; Bhatt, A. K. Enantioselective catalytic epoxidation of nonfunctionalized prochiral olefins by dissymmetric chiral Schiff base complexes of Mn(III) and Ru(III) metal ions. II. *J. Mol. Catal. A: Chem.* (1997), 120(1-3), 101-108.