

# Nanda Gopal Sahoo, Ph.D.

## Associate Professor

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### CAREER OBJECTIVE:

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- The success of my research is my pleasure.
- To get a leading role in my research area is my ambition.

### SUMMARY OF ACHIEVEMENTS:

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- **Associate Professor:** Dept. of Chemistry, Kumaun University, D.S.B. Campus, Nainital (Since July 2013).
  - **IUSSTF BASE Fellow:** Virginia Commonwealth University, Virginia, **USA**, Aug. 2014 - Jan 2015
  - **Scientist:** Institute of Materials Research and Engineering (IMRE), Singapore (Sept. 2012- July 2013)
  - **Scientist: Energy Research Institute, Singapore** (Aug. 2011-Aug. 2012)
  - **Lee Kuan Fellow:** Nanyang Technological University (Aug. 2008-July 2011)
  - **Postdoctoral Research Fellow:** Nanyang Technological University (July 2006-July 2008)
  - **Postdoctoral Research Fellow:** Konkuk University, South Korea (Jan. 2005-July 2006)
  - **Lee Kuan Yew Fellowship** (Most prestigious fellowship in Singapore), Singapore (Aug.2008- July 2011)
  - **BASE Fellowship**, Department of Science and Technology, Govt. of India, and the Indo-U.S. Science and Technology Forum (IUSSTF), 2014
  - Author of the second of the top 25 hottest articles in Progress in Polymer Science (IF: 26.8)
  - Author of one of the hottest articles in the field of physical chemistry by John Wiley & Sons, Inc.
  - Author of **70** international journal publications (max **IF: 26.8**), **3** book chapters, and **42** conference papers and reviewer of **16** international journals with total citations of 3100 (Google Scholar) and *h* index of **24**
  - **Visiting Scientist:** Free University of Berlin, Berlin, Germany, Dec 2009
  - **Visiting Scientist:** Konkuk University, Seoul, South Korea, Jan 2013
  - **Invited Speaker:** 2nd Molecular Materials Meeting (M3) @ Singapore, Jan. 2012
  - **Editorial Board:** Journal of Chemistry & Applied Biochemistry, Journal of Chemical Engineering and Chemistry Research.
  - **Guest Editor:** International Journal of Polymer Science, Journal of Spectroscopy
  - **Researcher** with more than 10 years of international research experience
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## RESEARCH INTERESTS:

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- Graphene based materials for fuel cell applications
- High performance CNT/polymer or graphene/polymer nanocomposites
  - Conductive polymer composites for micro fuel cells
  - Transparent polymer solar cell
  - Functionalization of Carbon Nanotubes and graphene
  - Electroactive shape memory polymer composites for smart actuators
  - Conducting polymers
- Fabrication and Characterization of Micro/nano particles for pharmaceutical applications
  - Drug delivery
  - Improve the solubility and dissolution rate of poorly water soluble drug

## EDUCATION:

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- **Ph.D. 2004, Materials Science**, Indian Institute of Technology, Kharagpur, India
  - ◇ Mentor: Prof. C.K. Das, Thesis Title: “*Self –Reinforced Composites Based on Liquid Crystalline Polymer and Thermoplastic Polymers*”
- **M.Sc. 1997, Physical Chemistry**, Vidyasagar University, India.
- **B.Sc. 1994, Chemistry (Hons.)**, Vidyasagar University, India.

## AWARDS & HONORS

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- **Lee Kuan Yew (LKY) Fellowship 2008** (Most prestigious fellowship in Singapore)
- **BASE Fellowship**, Department of Science and Technology, Govt. of India, and the Indo-U.S. Science and Technology Forum (IUSSTF), 2014
- **IUSSTF BASE Research Fellow**: Virginia Common Wealth University, Virginia, USA, Aug. 2014 - Jan 2015
- **Visiting Scientist**: Free University of Berlin, Berlin, Germany, Dec 2009, Department of Pharmaceutics with Prof. Rainer H. Müller.
- **Visiting Scientist**: Konkuk University, Seoul, South Korea, Jan 2013.
- **Invited Speaker**: 2nd Molecular Materials Meeting (M3) @ Singapore, 9-11 Jan., 2012
- **Editorial Board**: Journal of Chemistry & Applied Biochemistry, Journal of Chemical Engineering and Chemistry Research.
- **Guest Editor**: International Journal of Polymer Science, Journal of Spectroscopy.

## RESEARCH GRANT

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- **Principal Investigator (PI), SUG M58050000**: “Micro- and Nano-particle Design for Pharmaceutical Drug Preparation and Delivery Applications”, S\$ 179,790.19, 2009-2011, Completed.
- **Co-PI**: “Simulation of Composite Material Moisture Exposure Using Elevated Temperature”, S\$ 218,217.00, 2013-2014.

## PROFESSIONAL EXPERIENCE

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- **Associate Professor**: Dept. of Chemistry, Kumaun University, D.S.B. Campus, Nainital (Since July 2013).
- **Scientist II**: Institute of Materials Research and Engineering (IMRE), Singapore (Sept. 2012-July 2013)

- **Scientist:** Energy Research Institute, Nanyang Technological University, Singapore, Aug. 2011-Aug. 2012.
- **LKY Research Fellow :** School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore, Aug. 2008-July 2011
- **Postdoctoral Research Fellow:** School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore, Oct. 2007-July 2008.
- **Postdoctoral Research Fellow:** School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore, July 2006-Sep 2007.
- **Postdoctoral Research Fellow:** Artificial Muscle Research Center, Konkuk University, South Korea, Jan. 2005 – July 2006.
- **Research Professional:** Dalhousie University, Canada, Jan. 2004-May 2004.
- **Consultancy Project:** IIT Kharagpur, India, “Development of very thin silicone rubber membranes having permeability for PPB level concentrations of chemical agents” Sponsored by DRDE, Gwalior, INDIA.
- **P.G. Apprentice:** “NWDPR project”, Principal Agricultural Office, Paschim Medinipur, India, 1998-1999.

### TEACHING EXPERIENCE:

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- Since July 2013
  - ◇ Physical Chemistry
  - ◇ Bio-inorganic

### RESEARCH EXPERIENCE

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- **July 2013-till date:** *Kumaun University, India*
  - ◇ Functionalization of Graphene and CNTs
  - ◇ Fuel cell
  - ◇ Drug delivery
  - ◇ Solar cell
- **Sept’12 –July 2013 :** *IMRE, Singapore*
  - ◇ Polymer nanocomposites for marine and offshore industry
  - ◇ Functionalization of Graphene and CNTs
- **Aug’11 –Aug’ 12 :** *Energy Research Institute, NTU, Singapore*
  - ◇ Development of Graphene for fuel cells
- **Aug’08 –July’11:** *School of Mech. and Aero. Eng., NTU, Singapore*
  - ◇ Micro- and nano-particle design for pharmaceutical drug preparation and delivery applications
  - ◇ Conductive polymer composites for micro fuel cells
  - ◇ Advanced CNT/polymer or graphene/polymer nanocomposites
  - ◇ Functionalization of CNTs and graphene for drug delivery applications
- **Oct’07 –July’08:** *School of Mech. and Aero. Eng., NTU, Singapore*
  - ◇ Development of higher conductive polymer composites for micro fuel cell
- **July’06 –Sep’07:** *School of Chem. and Bio. Eng., NTU, Singapore*

- ◇ Preparation of micro and nano particles and composite particles for drug preparation and delivery applications
- ◇ Improve the solubility and dissolution rate of poorly water soluble drug using a novel modified 4-fluid nozzle spray dryer
- **Jan'05 – July'06** : *Artificial Muscle Research Center, Konkuk University, South Korea.*
  - ◇ Developed electroactive shape memory polyurethane composites using conducting fillers such as conducting polymers and carbon nanotubes for smart actuators.
  - ◇ Developed a new route to synthesize the polymeric carbon nanotube-polyurethane (PU) nanocomposites.
  - ◇ Dispersion and alignment of CNTs in a polymer matrix, including optimum blending, in situ polymerization, surfactants, chemical functionalization and electrospinning methods.
- **Jan'2000 – Dec'2004, Ph.D.** *Indian Institute of Technology, Kharagpur, India*
  - ◇ Self –Reinforced Composites Based on Liquid Crystalline Polymer and Thermoplastic Polymers. This work has novelty in various applications, especially in case of health care products, packaging, electrical and electronics fields, automotive industry, aerospace industry etc.
  - ◇ Developed Zn-ion coated nano silica-polyolifin and elastomer composites.
  - ◇ Developed very thin ( $\approx 20$  micron) silicon rubber membranes for defence applications.

## MEMBERSHIP

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- The Korean Fiber Society, South Korea. 2005-2006
- Royal Society of Chemistry, 2012- till date

## JOURNAL REVIEWER

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Chemical Physics Letters, ACS Sustainable Chemistry & Engineering, Materials Chemistry and Physics, International Journal of Pharmaceutics, Powder Technology, Journal of Applied Polymer Science, Journal of Nanoscience and Nanotechnology, Synthetic Metals, Journal of Polymer Science Part B: Polymer Physics, Letters in Drug Design & Discovery, Polymer Bulletin, Journal of Electroanalytical Chemistry, Graphene, Australian Journal of Chemistry, Journal of Materials Science: Materials in Electronics, Polymer Composites.

## OTHER PERSONAL INFORMATION

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- **Citizenship:** India
- **Status:** Married, Male
- **Date of birth:** 21-11-1973

## PUBLICATIONS

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- **Book Chapters:** 3
- **In International Journals: *Published:*** 70
- **Papers Presented In International/National conferences:** 42
  - **Total Citation:** 3100(from Google Scholar)
  - ***h* index=** 24 (from Google Scholar)

## **Book Chapters**

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1. **N.G. Sahoo**, S. Rana, J.W. Cho, L. Li, "Functionalization of CNTs and Application to Polymer Nanocomposites"(Invited), K.P. Lee, A. Gopal, F.D.S. Marquis Edn., "Functional Composites of Carbon Nanotubes and Applications", Transworld Research Network, Kerala, India, 2009, 1-21.
2. **N.G. Sahoo**, L. Li. "Carbon Nanotube Reinforced Polymer Composites for Aerospace Application". S. Zhang, D. Zhao Edn., "Aerospace Materials Handbook", Taylor and Francis Group, LLC, 2012.
3. A. Chaurasia, **N.G. Sahoo**\*, M. Wang, C.B. He, V. T. Mogal, "Fundamentals of Polymers Engineering", A. Y.-C. Nee, Edn., Handbook of Manufacturing Engineering and Technology, Springer, In Press, 2014.

## **In International Journals**

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### **Published**

#### **In 2014-2015:**

1. S. Basak, V.D. Punetha, G. Bisht, **N.G. Sahoo**\*, J. W. Cho, "Recent trends of polymer-protein conjugate application in biocatalysis - a review", **Polymer Reviews**, 2015, 55 (1), 163-198, **I.F. = 6.59**
2. M. Kakran M, **N.G. Sahoo**, L. Li L. Fabrication of Nanoparticles of Silymarin, Hesperetin and Glibenclamide by Evaporative Precipitation of Nanosuspension for Fast Dissolution. **Pharm Anal Acta** 6:326. 2015, I.F. = 1.8
3. A. Chaurasia, **N.G. Sahoo**, J. T. McLeskey Jr., X. Hu, Development and Characterization of Biocompatible Fullerene [C60]/Amphiphilic Block Copolymer Nanocomposite, **Journal of Spectroscopy**, Volume 2015, Article ID 578160.

#### **In 2013:**

4. **N.G. Sahoo**, Y. Pan, L. Li, C.B. He, "Nanocomposites for Bone Tissue Regeneration", **Nanomedicine**, 8, 639-653, 2013, **I.F. = 5.82 (Category Q1)**..
5. J. Liu, C.K. Poh, D. Zhan, L. Lai, S.H. Lim, L. Wang, X. Liu, **N. G. Sahoo**, C.M. Li, Z. Shen, J. Lin, "Improved Synthesis of Graphene Flakes From the Multiple Electrochemical Exfoliation of Graphite Rod", **Nano Energy**, 2, 377-386, 2013, **I.F. = 10.21, (Category Q1)**.
6. M. Wang, D. Yuan, X. Fan, **N.G. Sahoo**, C.B. He, "Polymer nanocomposite hydrogels exhibiting both dynamic restructuring and unusual adhesive properties", **Langmuir**, 29, 7087-7095, 2013, **I.F. = 4.38 (Category Q1)**.
7. P. Kannan, T. Maiyalagan, **N.G. Sahoo**, M. Opallo, "Nitrogen doped graphene nanosheet supported platinum nanoparticles as high performance electrochemical homocysteine biosensors", **Journal of Materials Chemistry B**, 1, 4655-4666, 2013.
8. M. Kakran, **N. G. Sahoo**, L. Li, Y. W. Tan, "Ternary dispersions to enhance solubility of poorly water soluble antioxidants", **Colloids and Surfaces A**, 433, 111-121, 2013, I.F. = 2.35 **(Category Q1)**.

9. J. Liu, H. Yang, S.G. Zhen, C.K. Poh, A. Chaurasia, J. Luo, X. Wu, E. K. Lee, **N. G. Sahoo**,\* J. Lin\*, Z. Shen\*, A Green Approach to the Synthesis of High-Quality Graphene Oxide Flakes via Electrochemical Exfoliation of Pencil Core, **RSC Advances**, 3, 11745-11750, 2013, **I.F. = 3.70** (Category Q1)
10. M. Kakran, **N. G. Sahoo**, M.N. Antipina, L. Li Modified supercritical antisolvent method with enhanced mass transfer to fabricate drug nanoparticles. **Materials Science & Engineering C. Biom. Appl.**, 33, 2864-2870, I.F.=2.73, (Category Q2).
11. M. Kakran, **N. G. Sahoo**, L. Li, Z. Judeh “Particle size reduction of poorly water soluble artemisinin via antisolvent precipitation with a syringe pump” **Powder Technology**, 237, 468-476, 2013, I.F.=2.27, (Category Q2)

#### In 2012:

12. **N.G. Sahoo**, Y. Pan, L. Li, S.W. Chan, “Graphene-based Materials for Energy Conversion”, **Advanced Materials**, 24, 4203-4210, 2012, **I.F. = 15.4**, (Category Q1).
13. Y. Pan, **N.G. Sahoo**, L. Li, “The application of graphene oxide in drug delivery”, **Expert Opinion on Drug Delivery**, 9, 1365-1376, 2012, **I.F. = 4.11**, (Category Q1).
14. H.K.F. Cheng, **N.G. Sahoo**, Y.P. Tan, Y. Pan, H. Bao, K. Chong, L. Li, S.H. Chan, J. Zhao, “Poly(vinyl alcohol) Nanocomposites Filled with Poly(vinyl alcohol)-grafted Graphene Oxide”. **ACS Applied Materials & Interfaces**, 4, 2387-2394, 2012, , **I.F. = 5.9**, (Category Q1)
15. L. Lai, H. Yang, L. Wang, **N.G. Sahoo**, Q.X. Tam, J. Liu, C.K. Poh, Z. Wang, Z. Shen, J. Lin “Tuning graphene surface chemistry to prepare graphene/polypyrrole supercapacitors with improved performance”, **Nano Energy**, 1, 723-731, 2012, **I.F. = 10.21**, (Category Q1).
16. J. Liu, L. Lai, **N.G. Sahoo**\*, W. Zhou, Z. Shen, S.W. Chan. Carbon Nanotube-Based Materials for Fuel Cell Applications, Invited, **Australian Journal of Chemistry**, 65, 1213-1222, 2012, I.F. = 1.64, (Category Q2)
17. M. Kakran, **N. G. Sahoo**\*, L. Li, Z. Judeh, “Fabrication of Quercetin Nanoparticles by Anti-solvent Precipitation Method for Enhanced Dissolution” **Powder Technology**, 223 59-64, I.F.=2.27, (Category Q2).
18. M. Kakran, **N. G. Sahoo**, I-L. Tan, L. Li, “Preparation of Nanoparticles of Poorly Water Soluble Antioxidant Curcumin by Antisolvent Precipitation Methods”, **J. Nanoparticle Research**, 14, 757, 2012, I.F.= 2.27 (Category Q1).
19. M. Kakran, R. Shegokar, **N. G. Sahoo**, A. Shaal, L. Li, R. H. Müller, “: Fabrication of quercetin nanocrystals: Comparison of different methods”, **European Journal of Pharmaceutics and Biopharmaceutics**, 80, 113-121, 2012, **I.F.=4.24** (Category Q1).

20. M. Kakran, R. Shegokar, **N. G. Sahoo**, S. Gohla, L. Li, R. H. Müller “Long term stability of quercetin nanocrystals prepared by different methods. **Journal of Pharmacy & Pharmacology**, 64, 1394-1402, 2012, I.F.=2.16, (**Category Q3**).
21. H.K.F. Cheng, T. Basu, **N.G. Sahoo\***, L. Li, S.H. Chan. “Current Advances in the Carbon Nanotube/Thermotropic Main-chained Liquid Crystalline Polymer Nanocomposites and Their Blends”, **Polymers**, 4, 889-912, 2012, I.F.=2.50, (**Category Q2**).
22. H.K.F. Cheng, Y. Pan, **N.G. Sahoo**, K. Chong, L. Li, S.H. Chan, J. Zhao, “Improvement in Properties of Multiwalled Carbon Nanotube/Polypropylene Nanocomposites Through Homogeneous Dispersion with the Aid of Surfactants”, **Journal of Applied Polymer Science**, 124, 1117-1127, 2012, I.F.= 1.64, (**Category Q2**).
23. H.K.F. Cheng, **N.G. Sahoo**, L. Li, X. Lu, “Thermal Kinetics of Montmorillonite Nanoclay/Maleic Anhydride-Modified Polypropylene Nanocomposites” **Journal of Thermal Analysis and Calorimetry**, 109, 17-25, 2012, I.F.= 2.20, (**Category Q3**).

#### In 2011

24. **N.G. Sahoo**, H. Bao, Y. Pan, M. Kakran, H.K.F. Cheng, L. Li, M. Pal, T.L. Poh, “Functionalized Carbon Nanomaterials as Nanocarriers for Drug Loading and Delivery of Poorly Water Soluble Anticancer Drug: A Comparative Study”, **Chemical Communications**, 47, 5235-5237, 2011, **I.F. = 6.71**(**Category Q1**).
25. Y. Pan, H. Bao, **N.G. Sahoo**, T. Wu, L. Li, “Water-Soluble Poly( N -isopropylacrylamide)–Graphene Sheets Synthesized via Click Chemistry for Drug Delivery”, **Advanced Functional Materials**, 22, 2754-2763, 2011, **I.F.=10.44**, (**Category Q1**).
26. H. Bao, Y. Pan, Y. Ping, **N.G. Sahoo**, T. Wu, L. Li, J. Li, L.H. Gan., “Chitosan Functionalized Graphene Oxide as a Nanocarrier for Drug and Gene Delivery” **Small**, 7, 1569-1578, 2011, **I.F.=7.51** (**Category Q1**).
27. **N.G. Sahoo**, H.K.F. Cheng, H. Bao, Y. Pan, L. Li, S.H. Chan, “Functionalization of Carbon Nanotubes for Optimal Intermolecular Interaction with a Liquid Crystalline Polymer”, **Soft Matter**, 7, 9505-9514, 2011, **I.F.=4.15** (**Category Q1**).
28. M. Kakran, **N.G. Sahoo**, H. Bao, Y. Pan, L. Li, “Functionalized graphene oxide as nanocarrier for loading and delivery of ellagic acid” **Current Medicinal Chemistry**, 18, 4503-4512, 2011, **I.F.=3.71** (**Category Q1**).
29. **N. G. Sahoo**, M. Kakran, L. A. Shaal, L. Li, R. H. Müller, M. Pal, T.L. Poh, “Preparation and Characterization of quercetin nanocrystals”, **Journal of Pharmaceutical Sciences** 100, 2379-2390, 2011, **I.F.= 3.0** (**Category Q1**).

30. M. Kakran, **N.G. Sahoo**, L. Li, “Dissolution Enhancement of Quercetin through Nanofabrication, Complexation, and Solid Dispersion” **Colloid and Surface B**, 88, 121-130, 2011. **I.F.= 4.28**, (Category Q2).
31. **N. G. Sahoo**, M. Kakran, L. Li, Z. Judeh, Rainer H. Müller., “Dissolution Enhancement of a Poorly Water Soluble Antimalarial Drug by Means of a Modified Multi-fluid Nozzle Pilot Spray Drier”, **Materials Science & Engineering C. Biom. Appl.**, 31, 391-399, 2011. I.F.=2.73, (Category Q2).
32. **N.G. Sahoo**, H.K.F. Cheng, H. Bao, L. Li, S.H. Chan, J. Zhao, “Nitrophenyl Functionalization of Carbon Nanotubes and its Effect on Properties of MWCNT/LCP Nanocomposites”, **Macromolecular Research**, 19, 660-667, 2011, I.F.=1.68. (Category Q1).
33. M. Kakran, **N. G. Sahoo**, L. Li, Z. Judeh, “Dissolution Enhancement of Artemisinin with  $\beta$ -cyclodextrin”, **Chemical & Pharmaceutical Bulletin**, 2011, 59, 646-652, I.F.= 1.37, (Category Q3).
34. S. Roy, **N.G. Sahoo**, H.K. F. Cheng, C.K. Das, L. Li, S.H. Chan, “Effect of Functionalized Carbon Nanotubes on Molecular Interaction and Properties of PEEK/LCP Blends” **Journal of Nanoscience Nanotechnology**, 10, 5242-5251, 2011, I.F.=1.34, (Category Q2).
35. M. Kakran, **N. G. Sahoo**, L. Li, Z. Judeh, P. Panda. “Dissolution Study of Drug-Polymer Composites Prepared by Evaporative Precipitation of Nanosuspension” **Journal of Biomaterials Science-Polymer Edition**, 22, 363-378, 2011, I.F.=1.35, (Category Q1 & Q2).
36. **N.G. Sahoo**, H.K.F. Cheng, L. Li, S.H. Chan, J. Zhao, “Strengthening of Liquid Crystalline Polymer by Functionalized Carbon Nanotubes through Interfacial Interaction and Homogeneous Dispersion”, **Polymers for Advanced Technologies**, 22, 1452-1458, 2011, I.F. = 1.96, (Category Q2).
37. **N. G. Sahoo\***, M. Kakran, A. Abbas, Z. Judeh, L. Li, “Preparation, Characterization and Dissolution Behavior of Artemisinin Microparticles”. **Advanced Powder Technology**, 22, 458-463, 2011, I.F.= 1.64 (Category Q3).

#### **In 2010:**

38. **N.G. Sahoo**, S. Rana, J.W. Cho, L. Li, S.H. Chan, “Polymer Nanocomposites Based on Functionalized Carbon Nanotubes (Review), **Progress in Polymer Science**, 35, 837-867, 2010, **I.F.= 26.85**, (Category Q1) (The second of the top 25 hottest articles, April 2010-Sep. 2010).
39. M. Kakran, **N. G. Sahoo**, L. Li, Z. Judeh, K. Chong, L. Loh. “Fabrication of drug nanoparticles by evaporative precipitation of nanosuspension”, **International Journal of Pharmaceutics**, 383, 285-292 (2010), **I.F. =3.78**, (Category Q2).



40. **N. G. Sahoo**, M. Kakran, L. Li, Z. Judeh, "Fabrication of Composite Microparticles of Artemisinin for Dissolution Enhancement," **Powder Technology**, 203, 277-287, 2010, I.F.=2.27, (**Category Q2**).
41. H.K.F. Cheng, **N.G. Sahoo**, L. Li, S.H. Chan, J. Zhao, "Complementary Effects of Multi-walled Carbon Nanotubes and Conductive Carbon Black on Polyamide 6", **Journal of Polymer Science Part B: Polymer Physics**, 48, 1203-1212(2010). I.F.= 2.54, (**Category Q2**).
42. M. Kakran, **N. G. Sahoo**, L. Li, Z. Judeh, "Dissolution of Artemisinin/Polymer Composite Nanoparticless Fabricated by Evaporative Precipitation of Nanosuspension" **Journal of Pharmacy & Pharmacology**, 62, 413-421, 2010. I.F.=2.16, (**Category Q3**).
43. H.K.F. Cheng, **N.G. Sahoo**, L. Li, S.H. Chan, J. Zhao, " Molecular Interactions in PA6, LCP and their Blend Incorporated with Functionalized Carbon Nanotubes" **Key Engineering Materials**. 447-448, 634-638, 2010.
44. H.K.F. Cheng, **N.G. Sahoo**, T. H. Khin, L. Li, S.H. Chan, J. Zhao. "The Role of Functionalized Carbon Nanotubes in a PA6/LCP Blend", **Journal of Nanoscience and Nanotechnology**, 10, 5242-5251, 2010. I.F.=1.34, (**Category Q2**).

#### In 2009:

45. **N.G. Sahoo**, H.K.F. Cheng, L. Li, Z. Judeh, S.H. Chan, J. Zhao, "Specific Functionalization of Carbon Nanotubes for Advanced Polymer Nanocomposites" **Advanced Functional Materials**, 19, 3962-3971, 2009. **I.F.=10.44**, (**Category Q1**), (**One of the hottest articles in the field of physical chemistry by John Wiley & Sons**).
46. **N.G. Sahoo**, Thet N.T., Cai J, L. Li, S.H. Chan, J. Zhao, "Improvement of mechanical and thermal properties of carbon nanotube composites through nanotube functionalization and processing methods" **Materials Chemistry Physics**. 117, 313–320 (2009). I.F.=2.13, (**Category Q1**).
47. **N.G. Sahoo**, A. Abbas, Z. Judeh, C. M. Li, K.-H. Yuen, "Solubility Enhancement of a Poorly Water-soluble Anti-malarial Drug: Experimental Design and Use of a Modified Multi-Fluid Nozzle Pilot Spray Drier " **Journal of Pharmaceutical Sciences**, 98, 281-296, 2009. , **I.F.= 3.0**. (**Category Q1 & Q2**).
48. **N.G. Sahoo**, Thet N.T., Q.H. Tan, L. Li, S.H. Chan, J. Zhao, "Effect of Carbon Nanotubes and Processing Methods on the Properties of Carbon Nanotube/Polypropylene Composites", **Journal of Nanoscience and Nanotechnology**, 9 (10), 5910-5919(2009).I.F.= 1.34. (**Category Q2**).
49. S. Roy, **N.G. Sahoo**, C.K. Das, L. Li, S.H. Chan, "Improvement of properties of polyetherimide/liquid crystalline polymer blends in the presence of functionalized carbon nanotubes", **Journal of nanoscience and Nanotechnology**, 9, 1928-1934 (2009). I.F. = 1.34. (**Category Q2**).

**In 2007-2008:**

50. **N.G. Sahoo**, A. Abbas, C.M. Li, “Micro/Nanoparticle Design and Fabrication for Pharmaceutical Drug Preparation and Delivery Applications” (**Review, Invited**), **Current Drug Therapy**, 3, 2008, 78-97.
51. H.H. So, J.W. Cho, **N.G. Sahoo**, “Effect of Carbon Nanotubes on Mechanical and Electrical Properties of Polyimide/Carbon Nanotubes Nanocomposites” **European Polymer Journal**, 43, 3750-3656, 2007. **I.F.=3.24**, (**Category Q2**).
52. **N.G. Sahoo**, Y.C. Jung, Hye Jin Yoo, J.W. Cho, “Polypyrrole Coated Carbon Nanotubes: Synthesis, Characterization, and Enhanced Electrical Properties”, **Synthetic Metals** 157 (8-9), 374-379, 2007. I.F.= 2.22, (**Category Q2**).
53. **N.G. Sahoo**, Y.C. Jung, Hye Jin Yoo, J.W. Cho, “Influence of Carbon Nanotubes and Polypyrrole on the Thermal, Mechanical and Electroactive Shape Memory Properties of Polyurethane Nanocomposites” **Composites Science and Technology**, 67, 1920-1929, 2007.**I.F.=3.63** (**Category Q1**).
54. **N.G. Sahoo**, Y.C. Jung, and J.W. Cho, “Electroactive Shape Memory Effect of Polyurethane Composites Filled with Carbon Nanotubes and Conducting Polymer” **Materials Manufacturing Processes**, 22, 419-423, 2007. I.F.= 1.48, (**Category Q3**).
55. **N.G. Sahoo**, Y.C. Jung, H.H. So and J.W. Cho, “Synthesis of Polyurethane Nanocomposites of Functionalized Carbon Nanotubes by in-situ Polymerization Methods” **Journal of the Korean Physical Society**, 51, S1-S6, 2007, I.F.=0.42 (**Category Q4**).

**In 2005-2006:**

56. **N.G. Sahoo**, Y.C. Jung, Hye Jin Yoo, J.W. Cho, “Effect of Functionalized Carbon Nanotubes on Molecular Interaction and Properties of Polyurethane Composites” **Macromolecular Chemistry and Physics**, 207, 1773, 2006. I.F.= 2.45, (**Category Q1**).
57. Y.C. Jung, **N.G. Sahoo**, J.W. Cho, “Polymeric Nanocomposites of Polyurethane Block Copolymers and Functionalized Multi-Walled Carbon Nanotubes as Crosslinkers” **Macromolecular Rapid Communications**, 27, 126, 2006. **I.F.= 4.6**, (**Category Q1**).
58. H.J. Yoo, Y.C. Jung, **N.G. Sahoo**, J.W. Cho, “Electroactive Shape Memory Polyurethane Nanocomposites from In-Situ Polymerization with Carbon Nanotubes” **Journal of Macromolecular Science Part B: Phys**, 45, 1, 2006. I.F.=0.62, (**Category Q3**).
59. **N.G. Sahoo**, Y.C. Jung, N.S. Goo, J.W. Cho, “Conducting Shape Memory Polyurethane – Polypyrrole Composites for an Electroactive Actuator” **Macromolecular Materials Engineering**, 290, 1049, 2005. I.F.= 2.78, (**Category Q2**).

**In 2002-2004:**

60. S. Chakraborty, **N.G. Sahoo**, G.K. Jana and C.K. Das, "Self-Reinforcing Elastomer Composite Based on EPDM and LCP" **Journal of Applied Polymer Science**, 93(2), 711, 2004. I.F.=1.64, (**Category Q3**).
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