




Faculty Details proforma for DU Web-site

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Title	Dr.	First Name	Tharanikkarasu	Last Name	Kannan	Photograph
Designation		Assistant Professor				
Address		Department of Chemistry North Campus, University of Delhi, Delhi – 110 007				
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Email		tharani@chemistry.du.ac.in or thavasu@gmail.com				
Web-Page		http://people.du.ac.in/~tharani/				
Educational Qualifications						
Degree		Institution			Year	
Ph.D.		Central Leather Research Institute, Degree awarded by University of Madras			1996	
M.Sc.. (Polymer Chemistry)		Dept. of Polymer Science, University of Madras			1989	
B.Sc. (Chemistry)		University of Madras			1987	
Any other qualification						
Career Profile						
Feb. 2010 – Till date		: Assistant Professor, Department of Chemistry, University of Delhi, Delhi				
Mar. 2007 – Feb. 2010		: Assistant Professor (Sr. Scale), Department of Chemistry, University of Delhi, Delhi.				
Jan. 2006 – Mar. 2007		: Assistant Professor, Department of Chemistry, University of Delhi, Delhi				
Mar. 2003 – Dec. 2005		: Lecturer, Department of Chemistry, University of Delhi, Delhi				
Feb. 2001 – Feb. 2003		: Principal and Senior Project Officer, Indian Institute of Technology at Madras, Chennai				
Sept. 1998 – Aug. 2000		: Post Doctoral Fellow, Japan Advanced Institute of Science & Technology, Japan.				
Mar. 1998 – Aug. 1998		: Fellow (Quick-hired Scientist), Central Leather Research Institute, Chennai.				
Oct.1996 – Sept. 1997		: Post Doctoral Fellow, Pusan National University, Pusan, South Korea				
Mar. 1996 – Sept. 1996		: Research Associate, Central Leather Research Institute, Chennai.				
Administrative Assignments						
Resident Tutor at Jubilee Hall, Mall Road, University of Delhi, Delhi – 110 007. Duration: September 2003 to August 2005. Duties: Day to day administration of this residential college of University of Delhi.						
Areas of Interest / Specialization						
Specialization: Polymer/Organic Synthesis Research Interest: Atom Transfer Radical Polymerization, Anionic Polymerization, Fuel Cell Membrane, Polymer-silicate Nanocomposite, Photo voltaic cells, OLED and PLEDs.						
Subjects Taught						
For M. Sc. (Chemistry): Organic Reaction Mechanism, Photochemistry and Pericyclic reactions, Organic Spectroscopy, Supramolecular Chemistry and carbocyclic rings.						

**M.Tech. (Chemical Processing & Technology):
Organic Reaction Mechanisms, Organic Spectroscopy (ESR & 2D NMR).**

For M.Phil. and Ph.D.:
Chemistry of Polymers

Research Guidance

1. Supervision of awarded Doctoral Thesis:

Mukesh Kumar. Novel Polymer-montmorillonite Nanocomposites through Controlled Radical Polymerization (Thesis submitted on March 2010 to University of Delhi)

Palash Jyoti Das. 2010. Synthesis and Characterization of Polyethyleneoxide based Triblock Copolymers through Anionic Polymerization, University of Delhi.

Hemant Verma. 2008. Novel Polyurethane Based Novel Tri-block through Atom Transfer Radical Polymerization, University of Delhi.

2. Supervision of Doctoral Thesis, under progress:

Gulshan Kumar Dhra. University of Delhi. Novel Polyelectrolyte Membranes for Fuel Cells. (Date of Registration: 13-11- 2006).

Anil Barak. University of Delhi. H-shaped Copolymers through Anionic Polymerization. (Date of Registration: 10-04-2008)

Parameshwar Makam. University of Delhi. Synthesis of anti-ulcer drugs. (Date of Registration: 05-05-2010)

3. Supervision of awarded M.Phil dissertations

Susanginee Nayak. 2009. Synthesis and Characterization of amphiphilic triblock copolymers using Polyurethane and DMAEMA through Atom Transfer Radical Polymerization. University of Delhi.

Publications Profile

1. (a) Books (Authored)

Kannan, Tharanikkarasu, Verma, Hemant. 2010. Atom Transfer Radical Polymerization: Novel Polyurethane-based ABA type Well-defined Tri-block Copolymers Saarbrücken, Germany: LAP Lambert Academic Publishing AG & Co KG.

(b) Book Chapter (Authored)

Venkataramani, Sriram, Kannan, Tharanikkarasu. 2010. A Novel Single-site Catalyst for Olefin Polymerization. In the Materials Science Forum: Current Application of Polymers and Nano Materials, Ed. Amir Al-Ahmed, 657: 83-87, Switzerland: Trans Tech Publications.

2. Research papers published in Refereed/Peer Reviewed Journals

Verma, Hemant, and Tharanikkarasu Kannan. 2010. Atom Transfer Radical Polymerization of Methyl Methacrylate Using Telechelic Tribromo Terminated Polyurethane Macroinitiator. *J. Macromol. Sci. Part A-Pure Appl. Chem.* 47(5): 407-15.

Nayak, Susanginee, Hemant Verma, and Tharanikkarasu Kannan. 2010. Synthesis and characterization of amphiphilic and hydrophobic ABA-type tri-block copolymers using telechelic polyurethane as atom transfer radical polymerization macroinitiator. *Colloid Polym. Sci.* 288(2): 181-88.

Venkataramani, Sriram, Tharanikkarasu Kannan, Palash Jyoti Das, and Ganga Radhakrishnan. 2009.

Novel AB crosslinked polymer networks from telechelic 4-vinylbenzyl carbamate terminated polyurethanes and different vinyl monomers. *Polymers for Advanced Technologies* 20(12): 892-98.

Verma, Hemant, and Tharanikkarasu Kannan. 2009. Telechelic Multifunctional Polyurethane-Based Macroinitiator for the Synthesis of Polystyrene-block-Polyurethane-block-Polystyrene Tri-Block Copolymers via Atom Transfer Radical Polymerization. *J. Macromol. Sci. Part A-Pure Appl. Chem.* 46(2): 179-85.

Verma, Hemant, and Tharanikkarasu Kannan. 2008a. Synthesis and Characterization of Novel Polyurethane-based Tri-block Copolymers Through Atom Transfer Radical Polymerization. *J. Polym. Mater.* 25(3): 437-43.

Verma, Hemant, and Tharanikkarasu Kannan. 2008b. Synthesis of tri-block copolymers through reverse atom transfer radical polymerization of methyl methacrylate using polyurethane macroiniferter. *Express Polymer Letters* 2(8): 579-88.

Verma, Hemant, and Tharanikkarasu Kannan. 2008c. Novel Telechelic 2-Methyl-2-Bromopropionate Terminated Polyurethane Macroinitiator for the Synthesis of ABA type Tri-block Copolymers through Atom Transfer Radical Polymerization of Methyl Methacrylate. *Polym. J.* 40(9): 867-74.

Kannan, Tharanikkarasu, Hemant Verma, Wonbong Jang, Seok Kyu Lee, Jongchul Seo, Sanghyun Baek, and Haksoo Han. 2008. Novel poly(methyl methacrylate)-block-polyurethane-block-poly(methyl methacrylate) tri-block copolymers through atom transfer radical polymerization. *J. Appl. Polym. Sci.* 108(3): 1538-44.

Verma, Hemant, and Tharanikkarasu Kannan. 2008d. Synthesis and characterization of novel polystyrene-block-polyurethane-block-polystyrene tri-block copolymers through atom transfer radical polymerization. *Polym. Int.* 57(2): 226-32.

Lee, Seokkyu, Wonbong Jang, Seunghyuk Choi, Tharanikkarasu Kannan, Yonggun Shul, and Haksoo Han. 2007. Sulfonated polyimide and poly(ethylene glycol) diacrylate based semi-interpenetrating polymer network membranes for fuel cells. *J. Appl. Polym. Sci.* 104(5): 2965-72.

Venkataramani, Sriram, Tharanikkarasu Kannan, and Ganga Radhakrishnan. 2006. Novel AB crosslinked polymer networks based on 1-vinylimidazole-terminated polyurethane and poly(methyl methacrylate). *Polym. Int.* 55(11): 1209-14.

Saimani, S., K. Tharanikkarasu, and G. Radhakrishnan. 2003. Aqueous dispersions of polyurethane polyacrylic acid multiblock copolymers through living radical polymerization. *J. Appl. Polym. Sci.* 87(7): 1109-15.

Sundar, Saimani, Kannan Tharanikkarasu, Aruna Dhathathreyan, and Ganga Radhakrishnan. 2002. Aqueous dispersions of poly(urethane-co-vinyl-pyridine) synthesised from polyurethane macroiniferter. *Colloid Polym. Sci.* 280(10): 915-21.

Sheikh, R. K., Kannan Tharanikkarasu, Ichiro Imae, and Yusuke Kawakami. 2001. Silacyclobutane as "carbanion pump" in anionic polymerization. 2. Effective trapping of the initially formed carbanion by diphenylethylene. *Macromolecules* 34(13): 4384-89.

Venkataramani, Sriram, P. Aruna, Tharanikkarasu Kannan, U. Venkateswarlu, and Ganga Radhakrishnan. 2001. AB crosslinked polymers based on cationomeric polyurethane and poly(methyl methacrylate): static and dynamic mechanical studies. *J. Appl. Polym. Sci.* 81(4): 813-21.

Sheikh, R. Karim., Ichiro Imae, Kannan Tharanikkarasu, V. M. J. LeStrat, and Yusuke Kawakami. 2000a. Silacyclobutanes as "carbanion pump" in anionic polymerization I. Anionic polymerization of styrene by potassium t-butoxide in the presence of silacyclobutanes. *Polym. J.* 32(6): 527-30.

Sheikh, R. K., Kannan Tharanikkarasu, Ichiro Imae, and Yusuke Kawakami. 2000b. Silacyclobutanes as Carbanion Pump to convert oxyanion into carbanion. *Abstr. Pap. Am. Chem. Soc.* 219: 403-POLY.

Kannan, Tharanikkarasu, and Byung K. Kim. 1999. Modification of aqueous polyurethane dispersions via tetraphenylethane iniferters. *J. Appl. Polym. Sci.* 73(14): 2993-3000.

Kim, B. K., K. Tharanikkarasu, and J. S. Lee. 1999. Polyurethane-polymethacrylic acid multiblock copolymer dispersions through polyurethane macroiniferters. *Colloid Polym. Sci.* 277(2-3): 285-90.

Kannan, Tharanikkarasu, Sundar Saimani, C. V. Thankam, and Ganaga Radhakrishnan. 1998. A new tetraphenylethane-based polyurethane iniferter for "living" radical polymerization of acrylonitrile. *J. Polym. Mater.* 15(3): 243-51.

Ramesh, S., K. Tharanikkarasu, G. N. Mahesh, and G. Radhakrishnan. 1998. Synthesis, physicochemical characterization, and applications of polyurethane ionomers: A review. *J. Macromol. Sci.-Rev. Macromol. Chem. Phys.* C38(3): 481-509.

Tharanikkarasu, K., and B. K. Kim. 1998. Multi-block copolymer dispersions through polyurethane macroiniferters. *Polym. Bull.* 40(6): 675-81.

Tharanikkarasu, K., S. Ramesh, G. N. Mahesh, and G. Radhakrishnan. 1997. Tetraphenylethane based polyurethane macroiniferters for "living" radical polymerization of vinyl monomers. *Met. Mater. Proc.* 9(2): 201-20.

Tharanikkarasu, K., and G. Radhakrishnan. 1997a. Tetraphenylethane iniferters - 9. Diphenylmethane diisocyanate-based polyurethane-polystyrene block copolymers through "living" radical mechanism. *Eur. Polym. J.* 33(10-12): 1779-86.

Kannan, Tharanikkarasu, C. V. Thankam, and Ganga Radhakrishnan. 1997. Tetraphenylethane iniferters - 8. Diphenylmethane diisocyanate-based polyurethane iniferter for "living" radical polymerization of methyl methacrylate. *Eur. Polym. J.* 33(10-12): 1771-77.

Tharanikkarasu, K., and G. Radhakrishnan. 1997b. Tetraphenylethane iniferters: Polyurethane-polystyrene multiblock copolymers through "living" radical polymerization. *J. Appl. Polym. Sci.* 66(8):

1551-60.

Mahesh, G. N., K. Tharanikkarasu, and G. Radhakrishnan. 1997a. Polyurethane-polyacrylic acid multi-block copolymers and their anionomers using a tetraphenylethane iniferter. *J. Polym. Mater.* 14(1): 13-19.

Tharanikkarasu, K., and G. Radhakrishnan. 1997c. 'Living' radical polymerization of styrene using tetraphenylethane-based polyurethane iniferter. *Polym. Int.* 43(1): 13-21.

Kannan, Tharanikkarasu, and Byung Kyu Kim. 1997. Aqueous Dispersions of Polyurethane Ionomers. *Progress in Rubber and Plastic Technology* 13: 26.

Mahesh, G. N., K. Tharanikkarasu, S. Ramesh, and G. Radhakrishnan. 1997b. Novel polyurethane multiblock copolymers and their zwitterionomers using a polyurethane macroiniferter. *J. Macromol. Sci.-Pure Appl. Chem.* A34(5): 819-29.

Mahesh, G. N., A. Sivaraman, K. Tharanikkarasu, and G. Radhakrishnan. 1997c. Synthesis and characterization of polyurethane-polyvinylbenzyl chloride multiblock copolymers and their cationomers using a polyurethane macroiniferter. *J. Polym. Sci. Pol. Chem.* 35(7): 1237-44.

Tharanikkarasu, K., and G. Radhakrishnan. 1997d. "Living" radical polymerization of styrene using diphenylmethane diisocyanate-based polyurethane iniferter. *J. Macromol. Sci.-Pure Appl. Chem.* A34(4): 559-71.

Tharanikkarasu, K., and G. Radhakrishnan. 1996a. Polyurethane-polymethacrylic acid multi-block copolymers and their anionomers through "living" radical mechanism. *Polym. Bull.* 37(6): 711-17.

Tharanikkarasu, K., and G. Radhakrishnan. 1996b. Tetraphenylethane iniferters .2. Toluene diisocyanate-based polyurethane iniferter for "living" radical polymerization of acrylonitrile. *J. Polym. Sci. Pol. Chem.* 34(9): 1723-31.

Kannan, Tharanikkarasu, and Ganga Radhakrishnan. 1996. Tetraphenylethane iniferters .3. "Living" radical polymerization of methyl methacrylate using toluene-diisocyanate-based polyurethane iniferter. *J. Macromol. Sci.-Pure Appl. Chem.* A33(4): 417-37.

Kannan, Tharanikkarasu, and Ganga Radhakrishnan. 1994. A Novel Polyurethane Macroinitiator for Free Radical Polymerization. *Eur. Polym. J.* 30(12): 1351-55.

Kannan, Tharanikkarasu, Rajalingam Ponnuswamy, and Ganga Radhakrishnan. 1992. Effect of Ionic Concentration and Counterion on properties of Poly (vinyl oxyacetic Acid). *Polymer* 33: 3643.

3. *Other publications (Edited works, Book reviews, Festschrift volumes, etc.)*

Patents:

Kannan, Tharanikkarasu, and Ganga Radhakrishnan. 1997a. Polyurethane-Polystyrene Block Copolymers through "Living" Radical Mechanism. Indian Patent No. 2541 DEL 97 28th August 1997.CSIR, India.

Kannan, Tharanikkarasu, and Ganga Radhakrishnan. 1997b. Novel Polyurethane Macroiniferters. Indian Patent No. 2446 DEL 97, 28th August 1997.CSIR, India.

Conference Organization/ Presentations (in the last three years)

List against each head(If applicable)

1. *Participation as Paper/Poster Presenter*

Kannan, Tharanikkarasu, Palash J. Das, and Yusuke Kawakami. 2009. Synthesis and characterization of polystyrene-*b*-polyethylene oxide-*b*-polystyrene triblock copolymers through anionic polymerization. Paper presented at 6th ISAMAP, November 21-23, in Chulalongkorn University, Bangkok, Thailand.

Verma, Hemant, Susanginee Nayak, and Tharanikkarasu Kannan. 2009. Synthesis of Tri-block Copolymers Via Controlled Radical polymerization of Methyl methacrylate using Novel Telichelic Tri-bromo Terminated Polyurethane Macroinitiator. Paper presented at Indo-Japanese Seminar on "Polymeric Advanced Materials", 26th February, in Department of Chemistry, University of Delhi, Delhi-110007, India.

Kumar, Mukesh, and Tharanikkarasu Kannan. 2009. Controlled Radical polymerization of Styrene and Methyl Methacrylate using Thermal Iniferter. Paper presented at Indo-Japanese Seminar on "Polymeric Advanced Materials", 26th February, in Department of Chemistry, University of Delhi, Delhi-110007, India.

Das, Palash Jyoti, Anil Barak, Parameshwar Makam, and Tharanikkarasu Kannan. 2009a. Synthesis of poly(ethylene oxide) based amphiphilic tri-block copolymers through anionic polymerization. Paper presented at Recent Advances in Polymer Technology, December 28-29, in North Maharashtra University, Jalgaon, India.

Das, Palash Jyoti, Anil Barak, Yusuke Kawakami, and Tharanikkarasu Kannan. 2009b. Polystyrene-block-polyethylene oxide-block-polystyrene tri-block copolymers from telechelic bromo-terminated polyethylene oxide and polystyrene anion. Paper presented at Indo-Japanese Seminar on "Polymeric Advanced Materials", 26th February, in Department of Chemistry, University of Delhi, Delhi-110007, India.

Verma, Hemant, Susanginee Nayak, and Tharanikkarasu Kannan. 2008. Atom transfer radical polymerization of methyl methacrylate using a novel telechelic tribromo terminated polyurethane macroinitiator. Paper presented at National Seminar on Polymer Science & Technology-Vision & Scenario, 3rd December, in Jamia Millia Islamia, New Delhi, India.

Verma, Hemant, and Tharanikkarasu Kannan. 2008a. Synthesis of ABA Tri-Block Copolymers through Atom Transfer Radical Polymerization. Paper presented at Advances in Polymer Science and Technology

(Poly 2008), January 28-31, in IIT Delhi, New Delhi, India.

Verma, Hemant, and Tharanikkarasu Kannan. 2008b. Novel Polyurethane-based Macroinitiator for the Synthesis of Tri-block Copolymers through Atom Transfer Radical Polymerization. Paper presented at POLYCHAR 16, February 17-21, in Lucknow University, Lucknow, India.

Kumar, Mukesh, and Tharanikkarasu Kannan. 2008. Novel Tetraphenylethane-based Thermal Iniferter for Controlled Radical Polymerization of Styrene and Methyl Methacrylate. Paper presented at National Seminar on Polymer Science & Technology-Vision & Scenario, 3rd December, in Jamia Millia Islamia, New Delhi, India.

Das, Palash Jyoti, Anil Barak, and Tharanikkarasu Kannan. 2008. Novel Polyethylene Oxide based tri-block copolymers through Anionic Polymerization. Paper presented at National Seminar on Polymer Science & Technology-Vision & Scenario, 3rd December, in Jamia Millia Islamia, New Delhi, India.

Verma, Hemant, and Tharanikkarasu Kannan. 2007a. Novel polystyrene-*b*-polyurethane-*b*-polystyrene tri-block copolymers through atom transfer radical polymerization. Paper presented at 9th CRSI National Symposium in Chemistry (NSC-9), February 1-4, in Department of Chemistry, University of Delhi, Delhi, India.

Verma, Hemant, and Tharanikkarasu Kannan. 2007b. Synthesis and Characterization of Novel polyurethane-based Tri-block Copolymers through Atom Transfer Radical Polymerization. Paper presented at Frontier in Polymer Science and Technology (POLY 2007), November 1-3, in Tezpur University, Assam, India.

Research Projects (Major Grants/Research Collaboration)

Completed Projects:

- 1) "Nucleophilicity Increasing at Polymer Chain Ends for the Preparation of Block Copolymers from Oxirane and Vinyl Monomers through Anionic Polymerization". Sponsor: Department of Science and Technology (DST), New Delhi, under "Fast Track Proposal for Young Scientist" scheme. Duration: 2005-2008. Role: PI
- 2) "Polyurethane-polyvinyl block copolymers through reverse atom transfer radical polymerization". Sponsor: Council of Scientific and Industrial research, New Delhi. Duration: 2005 to 2009. Role: PI

Current Projects:

- 1) "Investigations of Magnetic, Optical and Electrical Properties of Nanomaterials: Synthesis, Characterization and Applications" Sponsor: Department of Science and Technology (DST), New Delhi. Duration: 2009 to 2012. Role: Co-Investigator. Total Budget: Approx. 5 Crores.
- 2) "Synthesis and Characterization of Hydrophilic-*b*-Hydrophobic-*b*-Hydrophilic Tri-Block Copolymers through Atom Transfer Radical Polymerization". Sponsor: Council of Scientific and Industrial research. Duration: 2009 to 2012. Role: PI
- 3) "Polyurethane-based Tri-Block Copolymers through Atom Transfer Radical Polymerization". Sponsor: University Grant Commission, New Delhi. Duration: 2007 to 2010. Role: PI

Awards and Distinctions

- Brief bio-data appeared in Marquis Who's Who in the World, 2010 issue.
- Young Scientist project awarded by DST, India.
- Post-doctoral fellowship awarded JSPS, Japan.
- Brain Pool Fellow awarded by KOFEST, Korea.
- Post-doctoral fellowship awarded by JAIST, Japan.
- Fellow awarded by CLRI, Chennai-20, under "Quick Hired Scientist" scheme.
- Post-doctoral fellowship awarded by Korea Research Foundation, Korea.
- Research Associateship awarded by CSIR, New Delhi, India.
- Junior and Senior Research fellowship awarded to do Ph.D. by CSIR, New Delhi, India.

Association With Professional Bodies

1. *Editing*
2. *Reviewing*
3. *Advisory*
4. *Committees and Boards*
5. *Memberships*
 - Member American Chemical Society (ACS), USA
 - Fellow, Indian Chemical Society, India.
 - Life Member, Society of Polymer Science, India.
6. *Office Bearer*

Other Activities

Signature of Faculty Member

- You are also requested to also give your complete resume as a DOC or PDF file to be attached as a link on your faculty page.