Dr. Sadiqali Cheruthazhekatt

Assistant Professor

Contact Details

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Professional Qualifications

BSc	Specialization	Polymer Chemistry
	Institute/University	Calicut University
	Year	2005
MSc	Specialization	Polymer Chemistry (2nd Rank)
	Institute/University	Calicut University
	Year	2007
PhD	Specialization	Polymer Science
	Institute/University	Stellenbosch University, Stellenbosch, South Africa
	Year	2013

Areas of Interest

Analytical Chemistry, Molecular characterization, Multidimensional separation (2D Chromatography), Polyolefins, Preparation and characterization of polymer composites. Catalyst screening-supported/ un-supported / polymerization reactions/ oligomerization)

Professional Experience

- **Assistant Professor, National Institute of Technology Calicut (NITC), Calicut, India**
- **Post Doctoral Researcher, Stellenbosch University, Stellenbosch, South Africa.**

Publications

1. Sadiqali Cheruthazhekatt* and Harald Pasch. High temperature Liquid Exclusion-Adsorption Chromatography (HT-LE-AC): Full Isocratic Separation of Parent Isotactic Polypropylene Homopolymer from Ethylene-Propylene Copolymers. ***Polymer. 2015, 64, 1-7.***

2. Mohau Phiri, **Sadiqali Cheruthazhekatt,** Anita Dimeska and Harald Pasch. Molecular Heterogeneity of Ethylene-Propylene Rubbers: New Insights Through Advanced Crystallization-Based and Chromatographic Techniques. ***Journal of Polymer Science, Part A. Polymer Chemistry.*** **2015, 53: 863 – 874.**

3. Sadiqali Cheruthazhekatt* and Harald Pasch. Defining the Distribution of Ethylene-Propylene Copolymer Phases in Heterophasic Ethylene-Propylene Copolymers by a Sequential Xylene Extraction Method: Chemical and Morphological Analysis. ***Polymer, 2014*** **55, 5358-5369.**

4. Sadiqali Cheruthazhekatt* and Harald Pasch. Preparative Solution Crystallization Fractionation: A New Simple and Rapid Fractionation Method for the Chemical Composition Separation of Complex Ethylene-Propylene Copolymers. ***Analytical and Bioanalytical Chemistry, 2014,*** **406:2999–3007.**

5. Sadiqali Cheruthazhekatt* and Harald Pasch. Fractionation and Characterization of Impact Polypropylene Copolymers by High Temperature Two-Dimensional Liquid Chromatography. ***Macromolecular Symposia, 2014,*** **337, 51-57.**

6. Sadiqali Cheruthazhekatt,* Divann D Robertson, Margaretha Brand, Albert van Reenen and Harald Pasch. Solution Crystallization and Dissolution of Polyolefins as Monitored by a Unique Analytical Tool - Solution Crystallization Analysis by Laser Light Scattering. ***Analytical Chemistry, 2013,*** **85 (15), 7019–7023.**

7. Sadiqali Cheruthazhekatt, Gareth W. Harding, and Harald Pasch. Comprehensive High Temperature 2D-LC Combined with High Temperatue Gradient HPLC-FTIR for the Analysis of Impact Polypropylene Copolymers. ***Journal of Chromatography A. 2013,*** **1286, 69-82*.***

8. *Sadiqali Cheruthazhekatt,** Nuria Mayo, Benjamin Monrabal, and Harald Pasch. Chemical Composition Separation of EP Copolymers by CEF and HT-SGIC: Crystallization vs. Adsorption. ***Macromolecular Chemistry and Physics, 2013.*** **214, (19), 2165 - 2171.**

9. Sadiqali Cheruthazhekatt* and Harald Pasch. Improved Chemical Composition Separation of Ethylene-Propylene Random Copolymers by High Temperature Solvent

Gradient Interaction Chromatography. ***Analytical and Bioanalytical Chemistry, 2013***, **405 (16), 8607-8614**. *Selected for the cover image of issue 405 (16).*

10. Sadiqali Cheruthazhekatt,***** Thijs F. J. Pijpers, Vincent B. F. Mathot, and Harald Pasch. Preparative TREF - HT-HPLC - HPer DSC: Linking Molecular Characteristics and Thermal Properties of Polyolefins. ***Macromolecular Symposia, 2013,*** **330, 22-29.**

11. ***Sadiqali Cheruthazhekatt,*** Thijs F. J. Pijpers, Gareth W. Harding, Vincent B. F. Mathot, and Harald Pasch. Combination of TREF, High Temperature HPLC, FTIR and HPer DSC for the Comprehensive Analysis of Complex Polypropylene Copolymers. ***Analytical and Bioanalytical Chemistry, 2013,*** **405, 8995–9007.**

12. Sadiqali Cheruthazhekatt, Thijs F. J. Pijpers, Gareth W. Harding, Vincent B. F. Mathot, and Harald Pasch. Multidimensional Analysis of the Complex Composition of Impact Polypropylene Copolymers: Combination of TREF, SEC-FTIR-HPer DSC, and High Temperature 2D-LC. ***Macromolecules, 2012, 45 (4), pp 2025–2034.***

13. Sadiqali Cheruthazhekatt, Thijs F. J. Pijpers, Gareth W. Harding, Vincent B. F. Mathot, and Harald Pasch. Compositional Analysis of an Impact Polypropylene Copolymer by Fast Scanning DSC and FTIR of TREF-SEC Cross-Fractions. ***Macromolecules 2012, 45 (15), 5866-5880.***

14. Sadiqali Cheruthazhekatt, Mirko Černák, Pavel Slavíček, Josef Havel. Gas plasmas and plasma modified materials in medicine. ***Journal of Applied Biomedicine, 2010, 8:55–66.***

International Conference Talks (Selected)

1. Sadiqali Cheruthazhekatt, H Pasch **(Oral presented)**. Evaluation of Solvent Effects in Solution Crystallization Fractionation of Polyolefins. 5th International Conference on Polyolefin Characterization. September 21-24, 2014 Valancia, Spain.

2. Sadiqali Cheruthazhekatt (Invited talk): Recent Developments in Fractionation, Analytical Separation and Identification of Complex Polyolefins. Third International Conference on Polymer Processing and Characterization (ICPPC – 2014) 11-13 October 2014.Kottayam, India.

3. Sadiqali Cheruthazhekatt, H Pasch **(Oral presented)**. Molecular characterization of Impact Polypropylene Copolymers by High Temperature Two-Dimensional Liquid Chromatography. 12th Annual UNESCO/IUPAC Workshop and Conference on Macromolecules and Materials. 24 - 28 March, 2013, Stellenbosch, South Africa.

4. **Sadiqali Cheruthazhekatt**, Thijs F. J. Pijpers, Gareth W. Harding, Vincent B. F. Mathot, and Harald Pasch **(Oral presented)**. Prep TREF - HT-HPLC - HPer DSC: Linking Molecular Characteristics and Thermal Properties of Polyolefins. 4th International Conference on Polyolefin Characterization. October 21-24, 2012, The woodlands, Texas, U.S.A.

5. Sadiqali Cheruthazhekatt (Oral presented). Recent developments in the detailed characterization of an attractive commodity plastic: A short view on my research at Stellenbosch University. Stellenbosch, 31st of October 2013.

6. **Sadiqali Cheruthazhekatt**, Thijs F. J. Pijpers, Gareth W. Harding, Vincent B. F. Mathot, and Harald Pasch. Multidimensional Analysis of the Complex Composition of Impact Polypropylene Copolymers: Combination of TREF, SEC-FTIR-HPer DSC, and High

Temperature 2D-LC. 27th International Symposium on Polymer Analysis and Characterization (ISPAC), 2014, June 15-18, 2014 Les Diablerets, Switzerland.

7. Sadiqali Cheruthazhekatt, H Pasch. Molecular characterization of Impact Polypropylene Copolymers by High Temperature Two-Dimensional Liquid Chromatography. 6th International symposium on the Separation and Characterization of Natural and Synthetic macromolecules. Dresden, Germany. 4 - 8 February 2013.

8. Sadiqali Cheruthazhekatt, H Pasch. Chemical composition separation of EP copolymers by TREF, CRYSTAF, CEF and HT-SGIC: crystallization versus adsorption. POLYCHAR 22: World Forum on Advanced Materials. 7-11 April 2014, STIAS Research Centre, Stellenbosch, South Africa.

Achievements/Awards

- University Second Rank Holder in M.Sc Polymer Chemistry, from Calicut University. Kerala, India.
- Received PhD Incentive Bursary from Stellenbosch University, South Africa, for the successful completion of PhD study within minimum time period of three years.
- Received exceptional skill work permit in South Africa based on excellent publications within short time research stay at Stellenbosch University.
- Received NRF (National Research Foundation) free standing post doctoral fellowship (2014).
- Published papers in high impact top journals including ACS, Analytical Chemsitry, Macromolecules, Journal of Chromatography A with First and Corresponding Authorship having Citation more than 300.
- Reviewer for Journals: Journal of Planar Chromatography - Modern TLC, Spectroscopy Letters, Natural Product Research.

Project/Consultancy

- **PhD Project Completed (Co-Supervisor):**
  Multidimensional analytical approach for the characterization of complex ethylene-propylene copolymers (Mohau Justice Phiri, Stellenbosch University)

- **MSc Projects Completed (Supervisor):**
  1. **Comparative study on the molecular structure of ethylene/1-octene, ethylene/1-heptene and ethylene/1-pentene copolymers using advanced analytical methods (Stellenbosch University)**
  2. **Dissolution and Solution Crystallization Fractionation of Polyethylene and Ethylene Copolymer Blend (NITC, Calicut).**
  3. **Separation and Analysis of Polyolefin blend Components by Preparative Fractionation (NITC, Calicut).**

- **Consultancy (Project Coordinator): Thermal analysis of LCP/ PBT Polymers – Linking compositions and molding parameters (St. John's Enterprises, Auxiliary Unit of FCI OEN Connectors Ltd. (Kerala, India).**