

7th ICPC Short Course on Polyolefin Characterization Techniques Contents

Introduction to Polyolefins

- Polyolefin types
- Olefin polymerization reactor types
- Olefin polymerization catalysts
- New polyolefins
- Microstructure – Properties

Polyolefin Microstructure

- Polyolefins Microstructure
- IR Spectroscopy, MMD, CCD, Bivariate Distribution

GPC Basics

- Basic GPC mechanism
- Molecular Weight average concept
- GPC retention
- Band broadening
- Different ways to do calibrations
- GPC-Light Scattering
- GPC-Viscometry
- Universal calibration
- Triple detector
- Mark Houwink Plot
- Quad detector

GPC - Calculations

- Conventional GPC
- Viscometer
- Light Scattering
- Chemical Composition along the MMD

GPC - Practical Considerations

- Sample and System Preparation
- Column Technology
- Detector Technology
- Band Broadening considerations
- Systematic Approach

CCD Techniques: TREF, CRYSTAF, CEF and CFC

- Fundamentals of Crystallization techniques
- TREF
- CRYSTAF
- CEF
- Calibration and Calculations
- Hyphenated Techniques
- Cross Fractionation Chromatography

High Temperature HPLC

- Fundamentals of Liquid Chromatography
- Background of HT-LC Development
- High Temp. Solvent Gradient Interaction Chromatography
- High Temp. Thermal Gradient Interaction Chromatography
- Applications and New Developments

Preparative Fractionation

- Preparative Fractionation techniques
- Molar Mass Fractionation
- Composition Fractionation

Applications