# 6th ICPC Short Course on Polyolefin Characterization Techniques Agenda

**Sunday, November 6, 2016**

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<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/Presenter</th>
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<tr>
<td>7:30 - 8:15</td>
<td>Registration.</td>
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<td>8:15 - 9:00</td>
<td><strong>Introduction to Polyolefins</strong>&lt;br&gt;Joao Soares</td>
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<td>9:00 - 9:30</td>
<td><strong>Polyolefin Microstructure</strong>&lt;br&gt;Benjamin Monrabal</td>
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<td>9:30 - 10:30</td>
<td><strong>GPC Basics</strong>&lt;br&gt;Wallace Yau</td>
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<td>10:30 - 10:50</td>
<td><strong>Coffee Break</strong></td>
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<td>10:50 - 11:40</td>
<td><strong>GPC - Calculations</strong>&lt;br&gt;Alberto Ortín</td>
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<td>11:40 – 13:00</td>
<td><strong>GPC - Practical Considerations</strong>&lt;br&gt;David Gillespie</td>
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<td>13:00 – 14:00</td>
<td>Lunch</td>
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<td>14:00 – 15:20</td>
<td><strong>CCD Techniques: TREF, CRYSTAF, CEF and CFC</strong>&lt;br&gt;Benjamin Monrabal</td>
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<td>15:20 - 15:40</td>
<td><strong>Coffee Break</strong></td>
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<td>15:40 - 16:30</td>
<td><strong>High Temperature HPLC</strong>&lt;br&gt;Willem Degroot</td>
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<td>16:30 - 17:00</td>
<td><strong>Preparative Fractionation</strong>&lt;br&gt;Benjamin Monrabal</td>
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<td>17:00 – 18:00</td>
<td><strong>Applications</strong></td>
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### 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 - 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 Chrom.

### High Temperature HPLC
- Fundamentals of Liquid Chromatography.
- Background of HT-LC Development.
- Applications and New Developments.

### Preparative Fractionation
- Preparative Fractionation techniques.
- Molar Mass Fractionation.
- Composition Fractionation.

### Applications
- Application examples.