

Polymers Analysis and Processing

Venue: SABIC Polymer research Lab, Dept. of Chemical Engineering, KSU



Polymers Analysis
and Processing

First Day: Tuesday April 2, 2013

09:00 – 9:30 Welcome - Registration

9:30 – 10:30 Introduction to Polymers

- Definition, classification and example of polymers
- Polymerisation processes
- Brief idea about polymers being manufactured in Saudi Arabia and their applications

10:30 – 11:15 Thermal and viscoelastic properties of polymer

- Melting and crystallisation of polymers
- Thermal degradation of polymer
- *Viscoelastic properties*
- *Rheological and flow properties*
- *Melt flow index*

11:15 – 12:00 Mechanical properties of polymers

- *Tensile strength,*
- *elongation at break, yield stress*
- *Fracture toughness,*
- *flexural strength, etc.*

12:00 – 13:00 Prayer Break

13:00 – 15:00 Analysis and characterisation of polymer

13:00 – 14:00 Demonstration on MFI & DSC

14:00 – 16:00 Demonstration on rheometer & tensile tester

Second Day:- Wednesday April 3, 2013

9:00 – 10:00 Polymer Blends and Polymer Composites

- Definition and examples of blends and composites
- Use of blending and making polymer composites
- Introduction to polymer processing

10:00 – 12:00 Processing of Polymers

- Melt extrusion
- Spinning, drawing and milling
- Injection moulding
- Hot press film making

12:00 – 13:00 Prayer break

13:00 – 13:30 Polymer structure and functionality

- Molecular weight and mol wt distribution
- Presence of functional groups

13:30 – 14:00 Use of polymer and its impact on environment

- Polymer Degradation and Stability
- Environmental effects
- UV & temperature effect
- Weathering & ageing
- Biodegradable polymers

14:00 – 16:00

- Demonstration on FTIR, flame retardancy and degradation test.

16:00 – Discussion and Close

Speakers

Prof. Saeed Al-Zahrani

Dr. Syed Gulrez

Dr. Hamid Shaikh

Dr. Anesh Manjaly Poulouse

Prof. Saeed Al-Zahrani is a professor of chemical Engineering and the executive director of SABIC polymer research center at KSU.

Dr. Syed Gulrez is an Assistant professor at SABIC Polymer Research Center, King Saud University. He has obtained his PhD from University of Wales, U.K and M.Tech from Indian institute of Technology, Delhi, India. His area of interest includes polymer modification & characterization, radiation grafting, composites and Biomaterials.

Dr. Hamid Shaikh is an Assistant professor at SPRC at King Saud University. Dr. Hamid had PhD from National Chemical Laboratory, Pune, India. He has worked as a Postdoctoral Research Fellow at Trinity College, Dublin University, Ireland. His current research interests are in the field of biorefinery, biodegradable and smart polymers for various industrial applications.

Dr. Anesh Manjaly Poulouse received PhD from Palermo University, Italy and joined as assistant professor at SABIC polymer research centre, King Saud University. His area of interest mainly covers the polymer blends and characterization.

Learning Outcome:

Upon completion of this course, participants will get an idea about the fundamental of polymers, principle structure of polymers based composite materials, Basics of polymer processing, experimental techniques used in polymer field, in addition to thermal, mechanical, physical and chemical properties of polymers

Who Should Attend?

Engineers, Process Maintenance specialist, Plant Engineer, Inspection Engineers, Students, Lab Supervisor, Researchers and Lab technicians.

Course Charges: 5000 SR.

- 25% discount if 3 registered from the same organization.

For more information please contact SPRC:

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SPRC Short Course
April 2-3, 2013