COURSE OVERVIEW PE0091
Antifoam Theory

Course Title
Antifoam Theory

Course Date/Venue
Session 1: June 23-27, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
Session 2: December 07-11, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
PE091

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

This course is designed to provide participants with a detailed and up-to-date overview of Antifoam Theory. It covers the various types of polyolefins and structure, catalyst types, and industrial manufacture; the basic considerations on foams, foaming and foamed polymers; and the roles of expansion agents and surfactants in foam productions.

During this inter active course, participants will learn the effect of processing on foam properties, the effect of polyolefin and co-polymer structure on foam properties; the effect of stress and environment factors on foam stability and performance; the common applications of polyolefin foams; using structure-property relationships to understand changes in foam properties; and the aforementioned structure-property relations to design new foam products.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a good working knowledge on foam with polyolefins
- Discuss the various types of polyolefins as well as structure, catalyst types, and industrial manufacture
- Identify the basic considerations on foams, foaming and foamed polymers as well as the roles of expansion agents and surfactants in foam productions
- Explain the effect of processing on foam properties, the effect of polyolefin and co-polymer structure on foam properties as well as the effect of stress and environment factors on foam stability and performance
- Recognize common applications of polyolefin foams
- Use structure-property relationships to understand changes in foam properties
- Employ the aforementioned structure-property relations to design new foam products

Exclusive Smart Training Kit - H-STK®

*Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of antifoam theory for process engineers, chemical engineers and other technical staff working in olefin polymerization. Further, the course is suitable for plant engineers, R&D engineers and chemists.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

- The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Fee

US$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Mr. Mohammed Nassar, is a **Senior Process Engineer** with an extensive practical experience within the **Oil**, **Gas**, **Refinery**, **Petrochemical** and **Power** industries. His experience covers **Clean Fuel** Technology & Standards, **Clean Fuel** Specification, Emission Regulation, **Crude Oil** Production, **Desulphurization**, Synthesis **Gas Production**, **Naphtha** Isomerization, **Diesel Fuel Additives**, **Storage Tanks** Filtration, **Fuel Quality** Inspection, **Process Plant** Troubleshooting & Engineering Problem Solving, **Process Equipment** Operation, **Process Plant** Operation, **Process Plant** Start-up & Commissing, **Process Plant** Optimization, **Oil & Gas Field** Operation, **Oil Movement**, Storage & Troubleshooting, **Petroleum Refinery** Process, **Process Reactor** Operation & Troubleshooting, **LPG Oil & Gas** Operation & Troubleshooting, **Crude Oil & LNG** Storage, **LNG & LPG** Plants Gas Processing, **Refinery Process** Operations Technology, **Liquid Bulk Cargo Handling**, **Gas Conditioning** & Processing Technology, **Distillation Column** Design & Operation and **Gasoline & Diesel Fuel** Technology. Further he is also well-versed in **Refinery** Operational Economics & Profitablity, Aromatics Manufacturing Process, **Hydrogen Production** Operation, **Steam Reforming** Technology, **Gas Treating**, **Hydro-treating & Hydro-Cracking**, **Catalyst** Material Handling, Gas Sweetening & Sulfur Recovery, Hydro Carbon Dew Point (HCDP) Control, **Heat Exchangers** & Fired Heaters, **Amine** Gas Sweetening, **Plastic Additives** Selection & Application, **Crude & Vaccum** Process Technology, **Flare & Pressure Relief Systems**, Stock Management & **Tank Dipping** Calculation, **NGL Recovery & Fractionation**, **Refrigerant & NGL Extraction** and **Catalytic Craking & Reforming.**

During his long professional carreer, Mr. Nassar worked as a **Refinery Manager**, **Operations Manager**, **Section Head/Superintendent** and **Process Engineer** for **Process Units**, **Utilities & Oil Movement** in various companies. He has been responsible for a number of **technological-driven world-scale hydrocarbon processing projects** from **beginning to successful start-up**.

Mr. Nassar has a **Bachelor** degree in **Chemical Engineering**. He is an **active member** of the **American Institute of Chemical Engineers** (**AIChE**) and has presented **technical papers** at its **several national meetings**. He has largely participated in the **start-up of seven world-scale process plants** which made him an **International Expert** in **Process Plant Start-Up** and **Oil Movement** and a **Certified Instructor/Trainer**.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Review of Polymer Fundamentals*** *Polymer Structure & Properties*

0930 – 0945	*Break*
0945 – 1100	***Polyolefins General*** *Polyolefins Types ● Structure-Property Relationships*
1100 – 1230	***Polyolefin Synthesis & Manufacturing*** *Catalyst Types*
1230 – 1245	*Break*
1245 – 1420	***Polyolefin Synthesis & Manufacturing (cont'd)*** *Industrial Processes*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Polyolefin Morphology*** *Crystalline & Amorphous Morphology and Effect on Foams*
0930 – 0945	*Break*
0945 – 1100	***Polyolefin Types*** *Thermoplastic/Thermoset and Structural Variations*
1100 – 1230	***Polyolefin Foaming Process*** *Foaming Agents ● Surfactants ● Processing Variables*
1230 – 1245	*Break*
1245 – 1420	***Types of Foams*** *Closed Cell ● Open Cell ● Bead & Chip Foams*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Co-Polymer Structure-Property Relationships & Foam Properties*** *Foaming Agents ● Surfactants ● Processing*
0930 – 0945	*Break*
0945 – 1100	***Polyolefin Copolymers Used in Foams*** *EVA ● Rubbers ● Terpolymers ● Other Alkenes ● Norbornenes*
1100 – 1230	***Running Shoe Case Study*** *Copolymer Application to Cushioning in Running Shoes*
1230 – 1245	*Break*
1245 – 1420	***Shoe Example*** *Properties as a Function of Application*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0930	***Hip Protector Case Study*** *Application of Polyolefin Foams to Hip Protection*
0930 – 0945	*Break*
0945 – 1100	***Effect of Water, Oxidation and Other Effects on Foams*** *Reactive Foaming ● Emulsion: Chemical Solution*
1100 – 1230	***Sport Mat Case Study*** *Comparison of Polyolefins to Other Polymers in Extruded Mats*

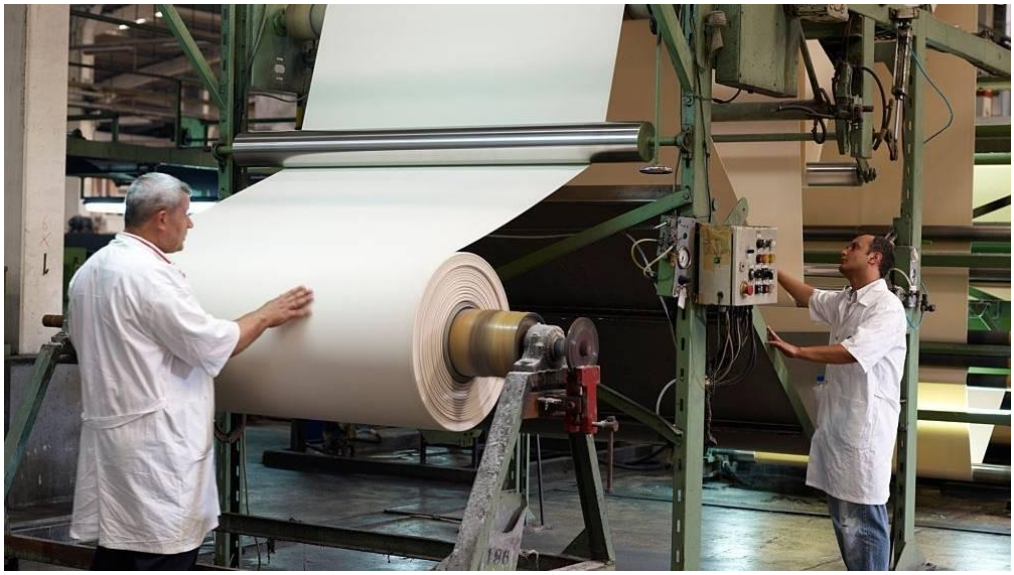
1230 – 1245	*Break*
1245 – 1420	***Packaging Case Study*** *Application of Polyolefin Foams to Consumer & Food Packaging*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0930	***Packaging Case Study (cont'd)*** *Application of Polyolefin Foams to Consumer & Food Packaging (cont'd)*
0930 – 0945	*Break*
0945 – 1100	***Polyolefin Application Limitations*** *Design Innovation Methods Applied to Polyolefin Foams*
1100 – 1230	***Innovation Case Study – Foam Seats*** *Modification of Polyolefin Foam Deformation to Replace Poly(urethane) Foams*
1230 – 1245	*Break*
1245 – 1345	***Review of Course Case Studies*** *Polyolefin Foams: PE, PP and Blend*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

This practical highly-interactive course includes the following real-life case studies:-



Course Coordinator

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