CINPAA | INTERNATIONAL COOPERATIVE FOR TRAINING & CONSULTING

سينبا | التعاونية الدولية للتدريب والاستشارات



Training programme:

NATURE OF POLYMER AND ITS CLASSIFICATION PROPERTIES AND APPLICATIONS

Delivered in several cities and dates

OUR INTERNATIONAL PARTNERS:

ISDE Law Business School High Performance Education
Higher Institute of Law and Business (ISDE)

Professional Development Institute
Professional Development Institute

Universidad Camilo José Cela
Camilo José Cela University

SEK EDUCATION GROUP

ISO 29993:2017 Learning services for non-formal education and training

ISO 9001:2015

NATURE OF POLYMER AND ITS CLASSIFICATION PROPERTIES AND APPLICATIONS

About the programme:

Introduction: This course provides an advanced level to polymer science and technology and covers advanced aspects of the nature of polymers, their synthesis, their structures, their properties, their processing and their applications. It should provide you with the extra knowledge you need to better understand your processes and will introduce the advanced principles of polymer processing to those who are unfamiliar with the subject or need refreshing. Agenda polymer processing industry - advanced overview of the industry Polymer materials - advanced Introduction to plastics materials and

Objectives:

Developing participants' skills, knowledge, values and professional approaches in:

a. Distinguish polymer classes using their structure and material properties.

b. Relate polymer behaviour to processing and service conditions.

c. Compare polymer selection criteria for specific applications.

d. Recognise the effect of additives and formulation on performance.

e. Evaluate a polymer application using relevant mechanical and environmental requirements.

Target audience:

a. Materials and polymer engineers.

b. Production and quality staff working with polymer products.

c. Technical specialists selecting plastics for industrial applications.

Daily programme:

• Day 1: Nature and classification of polymers

a. Polymer structure: monomers, chain length, molecular weight and chain architecture

b. Classification into thermoplastics, thermosets and elastomers and their behaviour on heating

c. Amorphous and semi-crystalline polymers and the role of glass transition and melting points

d. Overview of the polymer processing industry and its main product sectors

e. Workshop: classifying a set of polymer products by family and structure

f. Day output: polymer classification chart with typical applications

• Day 2: Properties, additives and material selection

a. Mechanical, thermal, chemical and electrical properties of common polymers

b. Additive systems: fillers, stabilisers, plasticisers, flame retardants and colourants

c. Effect of service conditions: temperature, UV exposure, chemicals and long-term loading

d. Selection criteria that match polymer properties to application requirements

e. Case study: selecting a polymer for an outdoor component exposed to sunlight and load

f. Day output: material selection matrix for one application

• Day 3: Injection moulding and thermoset moulding

a. Injection moulding principle, machine elements and standard terminology

b. Key injection moulding parameters and common defects with their likely causes

c. Thermoset moulding technologies and techniques, including compression and transfer moulding

d. Safe operation of moulding machines: guarding, hot surfaces and hydraulic hazards

e. Workshop: troubleshooting moulding defects from sample parts and process settings

f. Day output: defect troubleshooting guide for moulded parts

• Day 4: Extrusion, blown film and blow moulding

a. Single and twin screw extrusion: screw design, function and typical products

b. Blown film extrusion of mono-layer and multi-layer films

c. Extrusion blow moulding of mono-layer and barrier containers

d. Process control, quality checks and safe working practice on extrusion lines

e. Case study: choosing between single and twin screw extrusion for a compounded material

f. Day output: process selection notes for extruded and blow-moulded products

• Day 5: Thermoforming, composites, rotational moulding and applications

a. Vacuum forming and thermoforming: principles, materials used and typical products

b. GRP laminating principles, safe resin handling, ventilation and protective equipment

c. Rotational moulding: process stages, suitable materials and typical hollow products

d. Recycling, environmental requirements and end-of-life options for polymer products

e. Workshop: evaluating a polymer application against mechanical and environmental requirements

f. Day output: application evaluation report with recommended material and process

Training methods and certificates:

Our programmes are built on modern pedagogy that combines theoretical knowledge with practical application, in line with participants' needs and the demands of the workplace. Methods include:

· **Interactive workshops:** analysis of real data and group discussions that strengthen practical understanding.

· **Case studies:** examples from international organisations that highlight real successes and challenges.

· **Realistic simulations:** participants train through professional scenarios that mirror real situations requiring decisions and situation management.

· **Advanced tools and technologies:** hands-on practice with up-to-date training software and tools suited to each field.

Certificates:

On successful completion, participants receive a certificate issued by CINPAA, a training institute officially registered in the European Union, Spain and the United Kingdom.

CINPAA - Cooperative International for Training and Consulting

Our programmes are delivered within academic and professional partnerships, cooperation agreements and memoranda of understanding with a number of academic and professional institutions, including:

• Camilo José Cela University - Spain

• ISDE - Law & Business School - International

• Professional Development Institute - United Kingdom

These partnerships aim to exchange expertise, develop training content and raise programme quality in line with

international best practice.

Kind regards,
International Programmes Department
"CINPAA" INTERNATIONAL COOPERATIVE FOR TRAINING & CONSULTING

Course details and registration

Course Details | Registration

Programme	**NATURE OF POLYMER AND ITS CLASSIFICATION PROPERTIES AND APPLICATIONS**	Course Title
Language	**English**	Course Language
Venue	**Several cities and dates – see the table below**	Venue
Financial offer	**Sent separately, according to the number of participants and the delivery conditions.**	Financial Offer

Registration and confirmation:

To register, please use one of the following:

a. Complete the programme request form on our website.

b. Or send an email from your training department.

c. Or a nomination letter from your organisation.

Send your confirmation by:

Email	info@cinpaa.org
WhatsApp	+34 635 867 686

Our team is ready to advise on accommodation and logistics before and during your stay.

Planned programme dates:

City	Dates
Cairo, Egypt	21 - 25 Dec 2026
Cairo, Egypt	01 - 05 Feb 2027
Madrid, Spain	03 - 07 May 2027
Barcelona, Spain	02 - 06 Aug 2027
London, United Kingdom	01 - 05 Nov 2027

The programme can be delivered in other cities and on other dates to suit your organisation, at the length you need. The cities are listed on the last page.

سينبا التعاونية الدولية للتدريب والاستشارات | CINPAA – International Cooperative for Training & Consulting

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Cities where we deliver our programmes:

This programme can be delivered in any of the following cities, and elsewhere on request.

Albania Tirana, Saranda	**Australia** Sydney	**Austria** Vienna, Hallstatt, Salzburg / Zell am See	**Azerbaijan** Baku
Bahrain Manama	**Belgium** Brussels, Bruges	**Bosnia and Herzegovina** Sarajevo	**Canada** Toronto, Montreal
China Hong Kong, Shanghai, Beijing, Guangzhou	**Croatia** Dubrovnik	**Cyprus** Nicosia, Limassol, Larnaca	**Czech Republic** Prague
Egypt Cairo, Sharm El Sheikh, Alexandria, Hurghada	**France** Paris	**Georgia** Tbilisi, Batumi	**Germany** Munich, Berlin, Düsseldorf, Frankfurt
Greece Athens, Rhodes	**Hungary** Budapest	**Indonesia** Bali, Jakarta	**Ireland** Dublin
Italy Rome, Florence, Milan, Venice, Como	**Japan** Tokyo	**Jordan** Amman, Aqaba	**Kuwait** Kuwait City
Malaysia Kuala Lumpur	**Maldives** Maldives	**Mauritius** Mauritius	**Montenegro** Budva, Kotor
Morocco Casablanca, Marrakech, Tangier, Rabat	**Netherlands** Amsterdam	**Oman** Muscat, Salalah	**Philippines** Manila
Poland Krakow, Warsaw	**Portugal** Lisbon, Porto	**Qatar** Doha	**Russia** Moscow
Saudi Arabia Riyadh, Jeddah, Dammam	**Serbia** Belgrade	**Slovenia** Ljubljana	**South Korea** Seoul
Spain Madrid, Barcelona, Valencia, Alicante, Benidorm, Malaga / Marbella, San Sebastian, Granada, Cordoba, Canary Islands, Seville, Bilbao	**Switzerland** Geneva, Luzern, Zurich, Interlaken, Zermatt, Lugano	**Thailand** Bangkok, Phuket	**Tunisia** Tunis
Turkey Istanbul, Antalya, Trabzon, Bursa, Izmir, Bodrum, Antakya (Hatay)	**United Arab Emirates** Dubai, Abu Dhabi	**United Kingdom** London, Edinburgh, Manchester, Birmingham	**United States** Miami, New York, Los Angeles, Washington