



# S07 ADVANCED ANALYTICAL AND SEPARATION TECHNIQUES FOR POLYMER AND FUNCTIONAL MATERIALS

## Next-Gen Material Testing

Explores the latest breakthroughs in chromatography, spectroscopy, and microscopy to analyze highly complex, multifunctional, and 3D-printed materials.

## Green & Sustainable Analytics

Focuses on specialized testing and characterization methods tailored specifically for bio-based, eco-friendly, and circular economy polymers.

## Lab-to-Industry Solutions

Bridges the gap between advanced academic research and practical industrial applications like quality control, material processing, and environmental monitoring.

## Symposium Chair

Prof Dr Lim Lee Wah, Japan



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[macro2026.org/symposium](https://macro2026.org/symposium)



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## INTRODUCTION

The symposium “Advanced Analytical and Separation Techniques for Polymer and Functional Materials” aims to provide an international platform for researchers, scientists, academicians, and industry practitioners to discuss recent advances in analytical methodologies and separation technologies relevant to polymer science and functional materials. As polymer systems become increasingly sophisticated and multifunctional, there is a growing need for precise characterization, purification, and performance evaluation techniques to support innovation in both fundamental research and industrial applications.



## OBJECTIVES

- To highlight recent advances in analytical and separation techniques for polymers and functional materials.
- To promote interdisciplinary discussions among researchers, academicians, and industry practitioners.
- To explore innovative characterization methods for advanced, sustainable, and smart materials.
- To encourage collaboration between academia and industry in addressing analytical and processing challenges.
- To provide a platform for postgraduate students and early-career researchers to present and exchange ideas



## HIGHLIGHTS

- Emerging developments in chromatographic, spectroscopic, microscopic, thermal, and hyphenated analytical techniques.
- Advanced separation technologies for complex polymeric and multifunctional material systems.
- Applications involving nanomaterials, biomaterials, membrane technologies, and additive manufacturing materials.
- Analytical approaches for sustainable, bio-based, and environmentally friendly polymers.
- Industrial applications related to quality control, materials processing, environmental monitoring, and circular economy initiatives.
- Networking opportunities with international experts and leading researchers in polymer and functional materials science.