

General Workshop Information

Workshop Title: Real-Time PCR: Principles, Design, Implementation, and Data Analysis in Advanced Molecular Diagnostics

Workshop Type: Specialized Workshop of ICBME 2026

Organizer: The 33rd National Conference and the 11th International Conference on Biomedical Engineering

Instructor: Dr. Hanieh Shafienia, Faculty Member at Shahid Sadoughi University of Medical Sciences

Date: November 17, 2026

Duration: 4 hours

Format: Online

Venue: Isfahan University of Technology

Workshop Overview

This workshop aims to introduce participants to the principles and applications of Real-Time PCR (qPCR) in advanced molecular diagnostics. Participants will become familiar with experimental design, assay implementation, data analysis, and the application of qPCR technology in molecular diagnosis and analysis.

Topics and Course Outline

- Introduction to the fundamentals and principles of Real-Time PCR (qPCR)
- Overview of the main components and requirements of qPCR assays
- Introduction to primer and probe design for Real-Time PCR
- Overview of sample preparation and experimental procedures
- Introduction to methods for qPCR data quantification and analysis
- Interpretation of amplification curves and melt curves
- Introduction to gene expression analysis and the $\Delta\Delta C_t$ method
- Applications of Real-Time PCR in advanced molecular diagnostics
- Common challenges and practical considerations in experimental execution and data analysis

Registration Fee

General: 10,000,000 R

Conference Participant: 6,000,000 R