

## **Fundamentals of Quartz Crystal Microbalance Measurement**

A Basic Introductory Course for Those Who are Interested in the Principles and Use of Quartz Crystal Microbalance for Measurements  
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### Core Competency Training

Version: 1.1.0

Duration: 45 minutes

Number of Chapters: 4

Number of Course Pages: (including test pages & title pages): 93

Number of Test Questions: 44

### Course Description

Four (4) chapters with qualifying tests after each chapter cover the course content. Chapter 1 provides an overview on the concept of acoustics methods and piezoelectricity. Chapter 2 focuses on the practical aspects of resonators. Chapter 3 details the basic characteristics of Quartz Crystal Microbalance (QCM). Chapter 4 concludes by describing the relevance & correlation of the various QCM models.

### Learning objectives

- Understand the most relevant concepts about acoustic methods & piezoelectricity.
- Understand the basic electro-mechanical principles relative to QCM.
- Understand the basic characteristics of practical QCM.
- Understand the basics of the various QCM measurement methods.

### Intended Audience

This course is for everyone who is interested in the principles and practical application of Quartz Crystal Microbalance technology.

### Prerequisites

Trainees are required to possess a basic working knowledge of the computer, and possess basic competency in analytical and/or physical chemistry.

### Related courses

**Practical Aspects of Quartz Crystal Microbalance Measurement** – This course provides a basic foundation for the implementation of Quartz Crystal Microbalance measurements.

**Good Quartz Crystal Microbalance Measurement Practices** */coming soon/* – This course provides sound foundation for Design Qualification-Installation Qualification-Operational Qualification-Performance Qualification (DQ-IQ-OQ-PQ) of QCM measurements.

**Understanding the Uncertainty of Measurements of QCM Testing** */coming soon/* – This is an advanced course for the evaluation of the reliability of the QCM test system measurements.