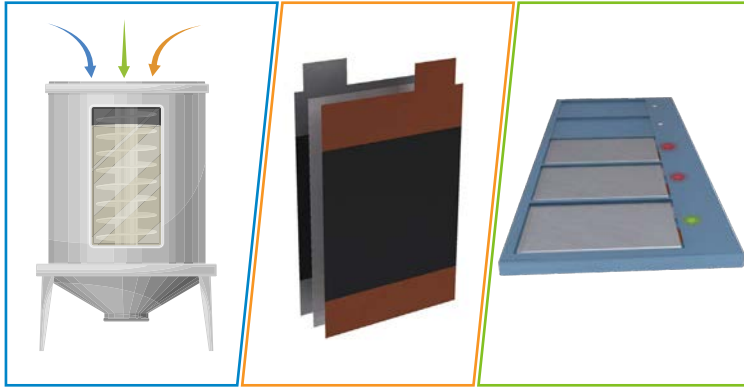


# LITHIUM-ION BATTERY MANUFACTURING

*eLearning courses designed to increase productivity and profits*



## Learning made Simple, Visual, and Interactive

The THORS *Lithium-Ion Battery Manufacturing* course discusses the manufacturing techniques of major components of a lithium-ion battery (LIB). This course also explains in detail about the numerous stages involved in the production of lithium-ion batteries.

Credit Hours **2**

## Learning Objectives

- Gain a broad knowledge of the different processes associated with the electrodes manufacturing of LIBs.
- Explain the different ways of preparing the electrolyte for LIBs.
- Elaborate on the manufacturing techniques of separators for LIBs.
- Understand the three major stages involved in the manufacturing processes of LIBs.
- Define and understand each step of the LIB manufacturing process.

## Table of Contents

### I. Component Manufacturing

- Anode Graphite Manufacturing**
  - Natural Graphite
  - Synthetic Graphite
- Cathode Material Synthesis**
  - Solid-State Processes
    - Solid-State Reaction
    - Mechano-Chemical Reaction
    - Carbothermic Reduction
    - Microwave Processing

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### I. Component Manufacturing (continued)

- Wet Chemical Processes**
  - Hydrothermal processing
  - Sol-Gel Method
  - Precipitation Method
  - Emulsion Drying
  - Spray Pyrolysis
- Electrolyte Salt and Solvent Preparation**
- Separator Membrane Manufacturing**
  - Wet Process
  - Dry Process

### II. LIB Manufacturing Processes

- Electrode Preparation**
  - Slurry Mixing
  - Coating, Drying, and Solvent Recovery
  - Calendering
  - Slitting
  - Vacuum Drying
- Battery Cell Assembly**
- Electrochemistry activation**
  - Forming
  - Aging

