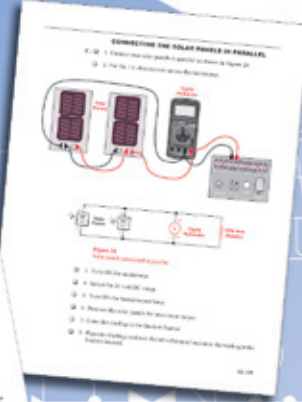
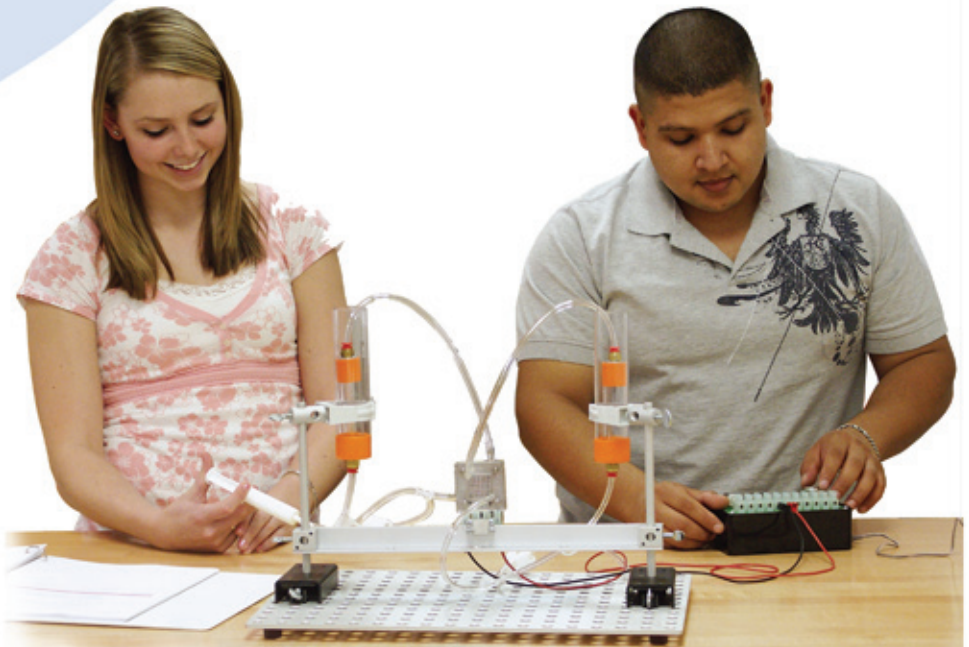


Engineering Principles

Alternative Energy

Science
Technology
Engineering
Math

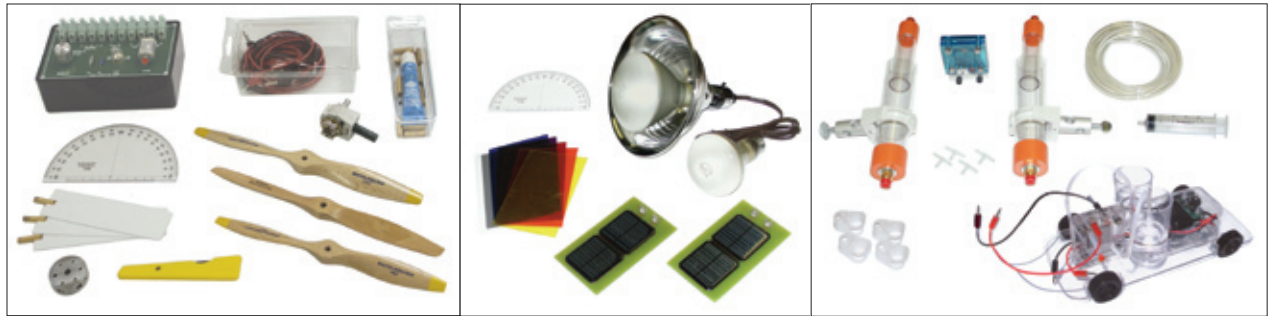


Alternative Energy

In ECI Model 274S Alternative Energy Trainer, students perform hands-on experiments for wind, solar, and fuel cell technologies. In this basic introduction to alternative energies, students are challenged to calculate energy needs, analyze data, and create their own designs. As the use of alternative energy is grows, the need increases to prepare students for careers in this field.

Components

- Propellers (3)
- Hub, Aluminum
- Blade Component Kit
- Plastic Cutter
- Plastic Cement
- Generator
- Fan (not shown)
- Solar Cell Modules
- Protractor
- Lamp
- Floodlights (2)
- Filter Set
- Lead Set
- Load Module
- Fuel Cell
- Reservoir Tanks (2)
- Collection Tanks (2)
- Tubing Package
- Syringe

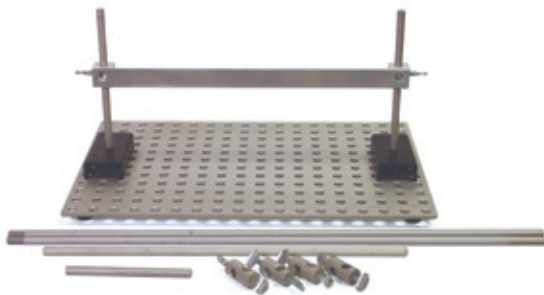


Wind

Solar

Fuel Cell

Support Stand Set



Instrumentation



Digital Anemometer



Digital Tachometer



Digital Multimeter

The Laboratory Manual

The Lab manual is designed to help students develop a thorough understanding of the subject matter. The manual is clearly written and professionally illustrated. It is printed in two-colors and comes in a quality vinyl binder.

System Familiarization and Safety

Wind Energy

- Gathering Data for Turbine Site
- Making a Wind Rose
- Generating Electricity
- Wind Speeds and Energy Output
- Designing Rotor Blades
- Evaluating Rotor Performance

Turbine Control Systems

- Designing A Wind Energy System
- Energy and Power Needs of a Home
- Using Data to Select Components

Solar Energy

- Introduction to Photovoltaic Systems
- The Greenhouse Effect
- Converting Light to Electricity

Finding the Maximum Power

Designing a Solar System for a Home

Hydrogen Fuel Cells

- Generating Hydrogen
- Generating Electricity with a Fuel Cell
- Running an Electric Motor
- Verifying the Presence of Gases



PB-274S

Instructor's Resource Guide

The Resource Guide includes sample data and answers to quiz questions, as well as a Student Journal CD. The journal provides a convenient way for students to enter and save their data and answers to experiment questions. The instructor can also have the students print paper copies to hand in for grading.

