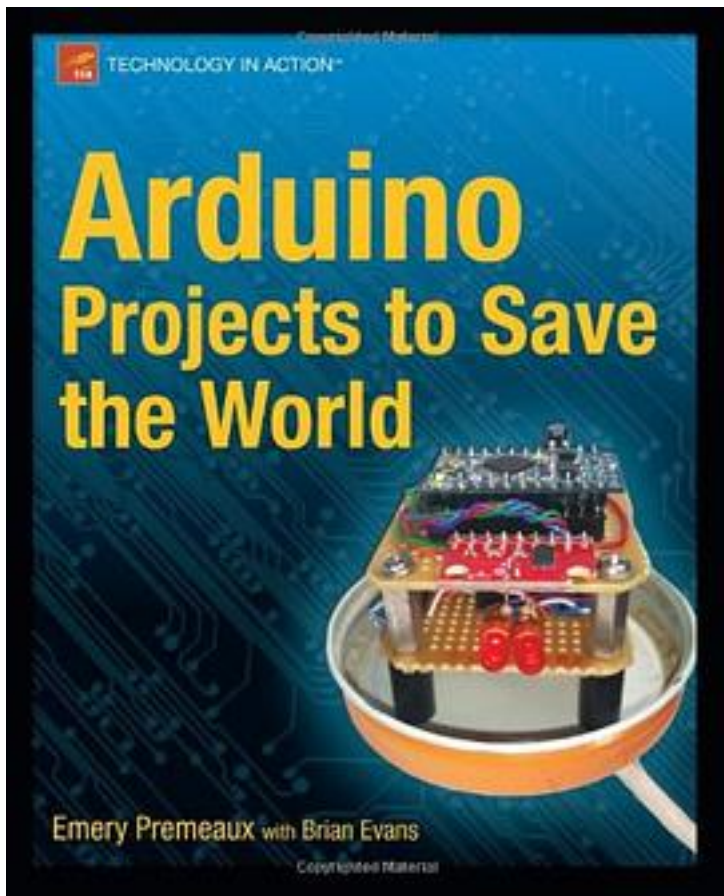# Arduino Projects to Save the World

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Arduino Projects to Save the World shows that it takes little more than a few tools, a few wires and sensors, an Arduino board, and a bit of gumption to build devices that lower energy bills, help you grow our own food, monitor pollution in the air and in the ground, even warn you about earth tremors. Arduino Projects to Save the World

introduces the types of sensors needed to collect environmental data--from temperature sensors to motion sensors. You'll see projects that deal with energy sources--from building your own power strip to running your Arduino board on solar panels so you can actually proceed to build systems that help, for example, to lower your energy bills. Once you have some data, it's time to put it to good use by publishing it online as you collect it; this book shows you how. The core of this book deals with the Arduino projects themselves: * Account for heat loss using a heat loss temperature sensor array that sends probes into every corner of your house for maximum measurement. * Monitor local seismic activity with your own seismic monitor. * Keep your Arduino devices alive in the field with a solar powered device that uses a smart, power-saving design. * Monitor your data and devices with a wireless radio device; place your sensors where you like without worrying about wires. * Keep an eye on your power consumption with a sophisticated power monitor that records its data wherever you like. Arduino Projects to Save the World teaches the aspiring green systems expert to build environmentally-sound, home-based Arduino devices. Saving the world, one Arduino at a time. Please note: the print version of this title is black & white; the eBook is full color. What you'll learn * Help the environment by using Arduino * Install and use environmental sensors * Use low-energy or solar energy sources for your Arduino board to avoid loading conventional energy grids * Build an Arduino-based seismic monitor to protect your home * Measure energy flows inside your home using temperature sensor arrays * Pull together your environmental data in an energy consumption monitor Who this book is for * Programmers excited by Arduino * Arduino users looking for green projects * Embedded systems engineers interested in Arduino Table of Contents * Saving the World: One Sensor at a Time * Spider Temps: A Temperature Measurement Tool with Six Legs * Jungle Power: Keeping an Arduino Alive on Solar, Batteries, and Super Capacitors * Tele-sensation: Wireless Communication for Long-Distance Measurement * Contributing to the Hive Mind: Submitting Your Data to Pachube * The Mass Effect: Measuring Earthquakes with This Seismometer * Staying Current: Keeping track of your power usage

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