

### Electronic Monitoring of Larvae and Adult Indianmeal Moths



#### REQUEST

Sensor Development Corporation is pioneering electronic insect sensing for quality monitoring of both larvae and adult insects in stored food products—a first. SDC seeks a partner for collaboration related to factors that influence instrument design specifications.

#### ISSUE

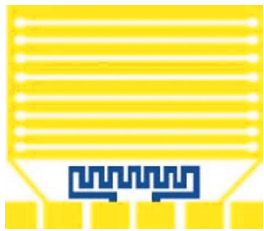
The economic losses from the larvae and adult Indianmeal moths during the processing, transportation and storage of food can be in the millions of dollars per incident, encompassing as it does the costs for contamination, product recall, consumer complaint/litigation, and pest control. In the U.S. and Europe it is the one insect pest that causes the most damage.

#### PROBLEM

Current methods for insect control in the food supply are focused on overall pre-treatment or outdated detection methods. These either result in over-use of pesticide or a too-late response that results in contamination and loss of product. Our approach is based on a novel early-sensing technology that will reduce food losses and prevent the over application of expensive pesticides.

#### SOLUTION

Our product is a better, faster, cheaper approach to reducing losses due to insect infestation in the food supply chain. Sensor Development Corporation’s nanocrystalline electronic insect sensing technology is being applied to sensing both the food consuming larval stages and the adult Indianmeal moth—a first. No physical sampling or insect classification by a person is required, a great improvement over all existing products. SDC’s person-portable larvae and adult Indianmeal moths sensor is a device based on an air sampling system and is shown on the right. This approach affords significant savings in time and costs over current testing procedures. SDC’s person-portable solution is designed to pinpoint semiochemical larval gases and adult pheromones and enables early sensing. Currently, the only competition to SDC’s advanced technology is expensive, cumbersome and imprecise. The competitor’s approach relies on flashlight inspection and the use of traps with multiple synthetic pheromone lures to capture adult Indianmeal moths effectively—but not larvae. This platform technology can be used to sense other insects and their larvae, such as bedbugs and termites.

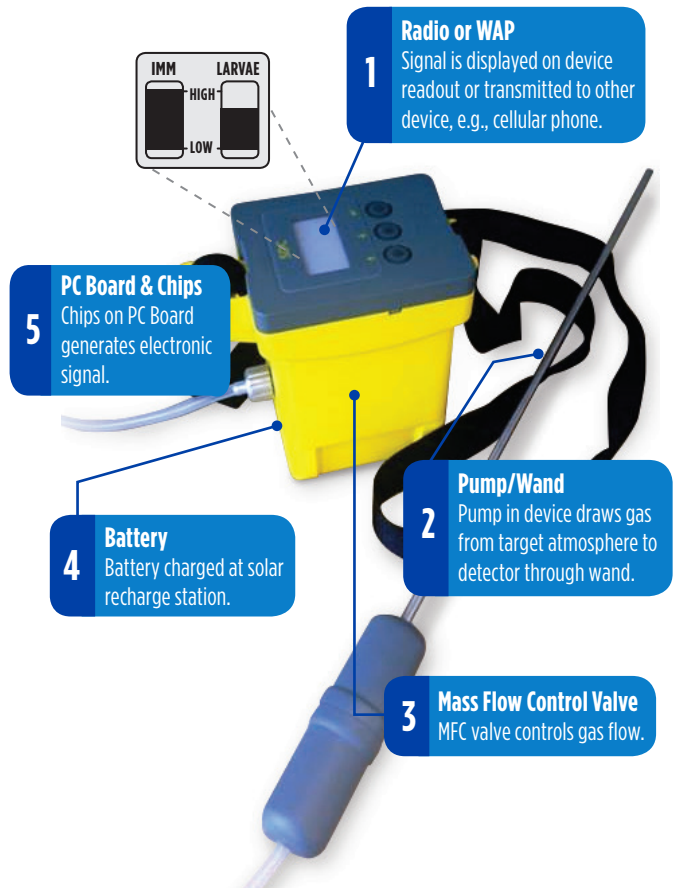


### BACKGROUND

The single focus of our organization since its founding over ten years ago has been the highly sensitive and selective

sensing of minute amounts of gaseous volatile organic compounds using nano-crystalline tin oxide sensors. These gases included mold gases from toxin producing molds and pheromones from highly destructive insects. Our in-house staff has extensive experience in the fabrication of and experimentation with these sensors, which will be the basis of the portable sensor we are developing.

### Person-Portable Sensor Device



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