

Portable Personal Detection Device



Required skills: desire to learn and change the world in the process!

Background

There is significant health risk associated with food allergies. Unfortunately, that issue has become more common in recent times and there is an urgent need for a consumer device that can scan and detect allergenic foods such as peanuts, lactose, and gluten to name a few. Although the need is age old, until recently there was no viable technology to enable a low cost, size, weight, and power solution. However, recent developments in imaging and processing technologies are showing a promising path towards such a solution. In particular, multi- and hyper-spectral imaging has shown the ability to detect and classify various chemical markers.

Objective

As a plethora of such products are becoming commercially available, there is an urgent need to evaluate such solutions and identify/develop possible alternatives designs and/or improvements that can yield significant improvements in this sensing domain. The required innovation will be in both the sensing hardware as well as the signal processing. It is anticipated that the team will acquire one or more sensors to collect and analyze data as well as to develop and experiment with new designs and/or improvements. There is also a need to integrate the sensor(s) on mobile platforms such as smart phones.

A viable sensor (cost, size, weight, power versus performance) solution that is integrated with a personal computing device such as a smart phone would be revolutionary to the food industry and possibly other applications. If you inspire to be part of this innovation that will have a wide-ranging impact, this is your opportunity to join us! The sponsor for this project is Textron Systems.