

PRESS RELEASE

»One spectral measurement does not provide sable information«

Fraunhofer Institute of Optronics, System Technologies and Image Exploitation is working on a democratized platform to standardize sensor measurement results in order to create a basis for comparison and to ensure quality.

Karlsruhe, 5th April 2017 – Sensors, including spectral sensors, are getting smaller and cheaper. In addition, they are now freely available for end-consumers in certain applications.

In common, mostly complex industrial applications, a sensor usually helps to answer a specific question. Conversely, in a broad-scale application, different problems have to be solved for different locations the same time.

In order to extract information from the measurements which the consumers can use, first of all the influencing factors have to be compensated for it is often the case that two sensors of exactly the same type do not provide identical measurements, as stated by Henning Schulte from Fraunhofer IOSB. The Institute is working on standardizing the measurement data and making previous knowledge useable for acceptable results.

Pressekontakt

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Several influences lead to different measurement results. For example, at least two factors influencing spectral sensor measurements have to be compensated for in order to obtain usable results:

1. The variance in spectral measurements. This is influenced by differences between the sensors, differences in the illumination during the measurement and the position and use of the sensor during the measurement.
2. Differences in the spectral fingerprint for the measured products – for example, the carbohydrates in cheese are bound differently than in vegetables or chocolate; the values not only differ from product to product but also from season to season.

The broader the question, the more imprecise the result

Many solutions that have already been presented with a low-priced sensor for consumers seem to answer a complex question. However, they actually only provide a reliable answer for one specific product. “The problem with these solutions is that the evaluations based on a spectral analysis in general don’t work for everything”. According to Schulte, the following holds without previous knowledge: the broader the question, the more imprecise the result. Before sensors can scan food reliably in future, and support decisions, the basis has to be laid.

»Even the current solutions which were awarded the EU FoodScanner Prize at CeBIT 2017 cannot meet the high expectations. In order to create a basis for comparison we need an infinite number of measurements,“ commented Schulte.



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The future: recording product information using a mobile phone © Fraunhofer IOSB

Fraunhofer IOSB is working on establishing a research platform, which collects data, for example from various sensors, and allows queries from a variety of different perspectives.

Redaktion

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