

News release

New Application for trinamiX Near-Infrared Spectroscopy Solutions: Plastic Sorting Made Easy

July 01, 2020 – Ludwigshafen, Germany – trinamiX GmbH, a wholly owned subsidiary of BASF, today announced it has developed a new application for its mobile Near-Infrared (NIR) Spectroscopy Solutions related to plastic sorting and recycling. Using trinamiX technology, the diverse compositions of different plastics can now be precisely determined and thus distinguished via the simple use of a portable handheld device that combines trinamiX data analysis with a mobile app. As such, recycling and recyclability are improved, paying off for both the environment and businesses alike.

NIR spectroscopy is a proven technology and used in laboratories around the world – the innovation is the portable format of the spectrometer and the sophisticated data analysis that can now be processed in the field via wireless cloud uploading. Slightly larger than a mobile phone, the spectrometer has nearly universal use cases. "We have packed an established test and analysis method into a handy portable format," explained Adrian Vogel, Manager Sales and Business Development Spectroscopy Solutions at trinamiX. "Both the product miniaturization and its wireless connection to the cloud make it possible to use NIR spectroscopy anywhere and at any time for precise material identification."

With the help of trinamiX NIR Spectroscopy Solutions, all common plastics can now be easily identified within seconds. The spectrum ranges from classic polyolefins such as PE, PP and PVC (polyethylene, polypropylene and polyvinyl chloride), to PET (polyethylene terephthalate), which is best known as a material for beverage bottles. In addition, technical plastics such as ABS (acrylonitrile butadiene styrene) or PA (polyamide), whose distinction is particularly important for the recycling companies, can also be correctly identified in the field (especially in blends with other plastics). trinamiX can integrate additional materials according to customer requirements.

Unique combination of portable hardware, data analysis and material expertise

trinamiX NIR Spectroscopy Solutions were first publicly demonstrated in March 2020 and comprise the portable NIR spectrometer, data analysis (chemometry) in the cloud as well as an app to display the results and recommended actions. The individual spectra of the plastics are stored in the cloud and matched with the measurement data of the spectrometer in seconds. The user directly receives the name of the identified material in the app. Measurement results can not only be displayed on mobile devices, but also on the customer's PC. This enables both rapid ad-hoc analyses as well as further evaluations and downloads.

Thanks to the flexible system design, trinamiX continuously adapts its solutions to customer and application-specific requirements. Buyers of the trinamiX NIR Spectroscopy Solutions can easily

update them, integrate new materials or completely new applications, and take advantage of improvements – without buying new hardware.

Added value instead of additional costs

Wherever quick identification has an advantage, the trinamiX solution is a good decision aid. In recycling, for example, it is aimed at companies that do not need a large, stationary sorting plant, but a flexible and mobile solution. Examples include recycling yards and plants as well as manufacturers of recycled goods. The solution is also interesting for decommissioning companies and large dealers. "If valuable plastic waste can be classified and collected separately right where it is generated, the transportation costs to central sorting plants and thus CO₂ emissions are reduced. In addition, pure plastic materials can be sold as resource," explained Adrian Vogel regarding the benefits for the environment and users.

About trinamiX

trinamiX www.trinamixsensing.com is a wholly-owned subsidiary of BASF SE, the world's largest chemical company. Founded in 2015, the company has developed a wide-ranging portfolio of technologies and products around both Infrared detection as well as 3D imaging and distance measurement employing a team of more than 100 experts across a wide range of scientific disciplines.

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