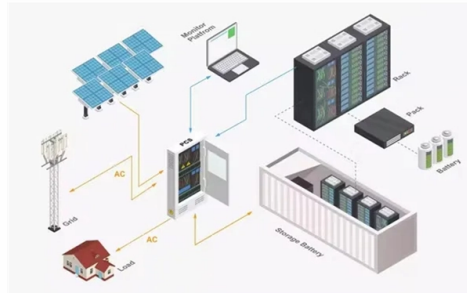


Plastic Composition Spectrometer



Overview

A powerful, handheld tool to identify all common polymers for plastic sorting, recycling and waste management. Identify a variety of plastic types including PP, PE, PET, PS, PVC, ABS, POM, PMMA, EVA, PC, TPR, and many others, and also distinguish polymers such as PA6. Traditional spectrometers, while reliable, tend to be heavy, expensive, and sensitive to temperature and mechanical shock, restricting their usability in many situations. Plastic spectrometers represent a shift from conventional engineering approaches. Initial studies into their feasibility began. While Raman spectroscopy is a powerful non-destructive technique for the identification and characterization of plastics, its effectiveness suffers because many common additives, such as pigments, are highly fluorescing. Time-gated Raman can effectively extract Raman peaks from fluorescent. Our Mobile NIR Spectroscopy Solution combines mobile hardware, data analysis, and material expertise to differentiate a wide range of plastic types, supporting your journey toward a circular economy. They provide reliable results directly on site in just a few seconds.



Article Content

Plastic Analytics

Our research in Environmental Science & Technology introduces a consolidated spectral library and machine learning framework for standardised plastic analysis, providing significant improvements in

Quantification of the composition of pyrolysis oils of complex plastic ...

This work proposes a method to quantitatively measure the composition of pyrolysis oils coming from three types of polymeric waste: (1) plastic packaging from sorting plants of municipal solid waste, (2)

Plastics Identification Using ATR-FTIR Spectroscopy

Introduction Plastics are among the most used products worldwide, with global plastics production in 2020 estimated to be 367 million metric tons.¹ Plastics are incredibly versatile due to their low-cost

Material Identification of Plastics Throughout Their Life ...

Fourier transform infrared (FTIR) spectroscopy is well suited to the identification of different types of plastic, providing reliable, high-quality data, and cost-effective analyses. This application note

Classifying Different Types of Plastic using FTIR Spectroscopy

Previous publications have identified spectra for many different types of plastic to build a database for a variety of unique compounds, including many different types of plastic that were analyzed in this

Compositional analysis of multilayered plastic constituents and ...

Journal Highlight: Multilayered plastics are widely used in food packaging and other commercial applications due to their tailored functional properties. By layering different polymers, the

FTIR and Raman Spectroscopy for the Analysis of

In order to obtain accurate data on the distribution of plastics within the natural environment, testing procedures that enable the size distribution and

Microplastics Analysis | Thermo Fisher Scientific

Learn how to measure microplastics contamination in our drinking water supply and bottled water. Evaluate the composition of microplastics to give you clues on sources of contamination.

Determination of the composition of multilayer plastic packaging with ...

One of the main challenges in plastic sorting is that the detection and separation of multilayer packaging from other materials is not possible yet. In this study, the possibility to de-tect and sort flexible

Characterization of Microplastics Using Fourier Infrared Spectroscopy

It is possible to identify microplastics using infrared spectroscopy thanks to the characteristic infrared spectra of numer-ous polymers that are often used to make plastic, including polyvinyl chloride

Detect plastics use mobile spectrometers

Are you looking for an analyzer for Plastics? Our team of experts will be happy to support you and answer your questions about application, technology and options.

Quantification of the composition of pyrolysis oils of

This paper presents a methodology to identify and quantify by GC-MS the composition of pyrolysis oils produced from different kinds of real complex

Fourier Transform Infrared Spectroscopy Analysis of

Infrared spectroscopy (FTIR) analysis of polymers and plastics for identification and quality assessment, providing data and meaningful information Fourier

Machine learning-assisted Raman spectroscopy for enhanced plastic ...

The use of a handheld Raman spectrometer introduces a practical dimension, reflecting real-world conditions of in situ plastic identification. Finally, a fully automatic algorithm for plastics

Analysis of Additives in a Polymer

2 Additives contained in a commercial polymer product were analyzed using the 6120B Single Quadrupole LC/MS System and MassWorks software. Data obtained by the single quadrupole mass

Fast and Simple Material Identification of Plastic Debris ...

Fourier transform infrared (FTIR) spectroscopy is well-suited to the identification of different types of plastic, as it provides reliable performance, high-quality data, and cost-effective analyses. This study

Polymers

Portable NIR Lab for Polymer Identification. A powerful, handheld tool to identify all common polymers for plastic sorting, recycling and waste management. Identify a variety of plastic types including PP,

Identifying plastics with photoluminescence spectroscopy and

A quantitative understanding of the worldwide plastics distribution is required not only to assess the extent and possible impact of plastic litter on the environment but also to identify possible

Plastics Identification Using ATR-FTIR Spectroscopy

Identifying different types of plastic to ensure efficient waste management is one tactic for reducing plastic pollution in our environment. In

Quantification of the composition of pyrolysis oils of complex plastic ...

This paper presents a methodology to identify and quantify by GC-MS the composition of pyrolysis oils produced from different kinds of real complex plastic waste: mixed plastics from packaging, mixed

Infrared Spectroscopy of Polymers

Infrared (IR) spectroscopy is a powerful analytical technique that provides insight into the molecular structures and interactions within polymers. This method is

MicroPHAZIR PC Portable NIR Spectrometer for Plastics

MicroPHAZIR PC handheld NIR analyzer identifies a multitude of various plastics within seconds by analyzing its chemical components.

Fast, On-Site Plastics Identification: trinamiX NIR Spectroscopy

Identify plastics quickly and easily with our mobile and robust NIR spectrometer. Get fast, on-site results and accurate plastic identification. Learn how NIR spectroscopy can help quality control, sorting and

APPLICATION NOTE Plastics Identification Using ATR-FTIR Spectroscopy

FTIR is a powerful qualitative and quantitative analysis tool. When a plastic absorbs IR radiation, the resulting signal is a spectrum that represents its molecular “fingerprint”. Different plastic samples

Exploring Plastic Spectrometers: Design and Applications

Plastic spectrometers represent a significant advancement in spectroscopy. Their use of lightweight materials, coupled with effective manufacturing techniques, sets them apart from traditional glass

Plastic composition analysis test items and test methods

The infrared analysis test of plastic composition analysis needs to follow certain test standards to ensure the accuracy and reliability of the test results. Some relevant test standards

Analysis of Acrylonitrile-Butadiene-Styrene (ABS) Plastics ...

Infrared spectroscopy, however, allows a rapid method for comparing commercial resins. In addition, infrared calibration curves are extremely useful in analyzing the composition of ABS plastics.

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Quality standards are defined for recycled plastics and to determine the composition of components, generally a sample is dissolved in a solvent and then analyzed using a nuclear magnetic resonance

Improving Composition Analysis and Sorting of Plastics

Increasing the quantity and quality of recycled plastics requires fast, accurate, and robust identification and sortation methods. Data and tools to improve the measurement of plastic

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