

# Spectrometer inside the mobile box



## Overview

Researchers at the Technische Universität Dresden and the Fraunhofer FEP are developing a novel type of an ultra-tiny spectrometer that fits into your mobile phone. The novelty here are metallic nano-antennas for harvesting, filtering and amplifying of incoming photons. A team of engineers has unveiled a revolutionary mini-spectrometer that can fit on a fingertip and operate with low voltage, scanning light from UV to near-infrared in under a millisecond. This game-changing device replaces bulky traditional spectrometers and could soon be embedded in smartphones. Just use a mobile phone containing a miniature spectrometer to control the quality of comestibles. Your typical mobile phone user—who may be cursing. Prepare to explore the top 14 USB pocket spectrometers of 2025, offering portable solutions for precise analysis—discover which one fits your needs best. And I really happy with t. These phones often come equipped with high-quality cameras that can be combined with basic optical elements to build a cost-effective DIY spectrometer.



## Article Content

DIY Smartphone DVD Spectrometer Guide | PDF

This document describes how to make a smartphone spectrometer using a diffraction grating from a DVD. The key steps are: 1. Cutting a diffraction grating from the

A Smartphone Attached Spectrometer ! Education With

In this project, I wanted to design an extremely easy to make smartphone spectrometer module, compatible with almost all smartphones. And I really happy

Silhouette Cut Public Lab Mobile Spectrometer

Silhouette Cut Public Lab Mobile Spectrometer: I am a fan of spectrometers. These instruments are used in industry and science to find out about compositions and

How Does a Spectrometer Work? Principles Explained

How Does a Spectrometer Work? Principles Explained An optical spectrometer, like the Ossila USB spectrometer, is the most common type. They take light, separate it by wavelength and create a

Buyer's Guide: Portable Spectrometers | Labcompare

Buyer's Guide: Portable Spectrometers Portable and handheld spectrometers bring detection and identification capabilities off of the bench and

MIT scientists develop tiny spectrometer that fits inside a smartphone ...

This miniature device is designed to fit inside a smartphone, enabling it to detect skin illnesses with precision and efficiency. As the world increasingly turns to telemedicine and mobile

Software turns every camera phone into a spectrometer | WIRED

Scheeline then published his source code, a compiled executable application and the mobile phone spectrometer instructions for anyone to download from the Analytical Sciences Digital

Smartphone Spectrometers

Indeed, the application of micro-spectrometers shows considerable future promise in smartphone spectroscopy, whether or not the phone camera is applied as the sensor.

Compact Fourier transform infrared spectrometer inside a glove box ...

Use of a compact Fourier transform infrared (FT-IR) spectrometer inside a glove box to investigate air and moisture sensitive compounds is reported. The FT-IR spectrometer,

Kickstarter turns phone, VHS box, into fully functioning spectrometer

Public Laboratories, an open research community, is now embarking on achieving this task. Jeffrey Yoo Warren has developed DIY spectrometer kits that aim to bring spectrometry to the

## SPECTROTEST

The SPECTROTEST mobile arc spark spectrometer is ideal for many applications in the metal producing, processing, and recycling industries. Find out more.

## Modern Physics demonstrations with DIY Smartphone Spectrometers

Here, we discuss a series of demonstrations and pedagogical exercises, accompanied by our DIY diffractive spectrometer that uses a free web platform for instant spectral analysis.

## 14 Best USB Pocket Spectrometers for On-the-Go

Prepare to explore the top 14 USB pocket spectrometers of 2025, offering portable solutions for precise analysis—discover which one fits your

## ACS Publications

Hier sollte eine Beschreibung angezeigt werden, diese Seite lässt dies jedoch nicht zu.

## New spectrometer could fit in your smartphone

At the Fraunhofer Institute for Applied Optics and Precision Engineering IOF, a team of smart scientists has created something pretty cool

## A mobile device-based imaging spectrometer for environmental

However, the existing mobile device-based spectrometer is currently not conducive to be further extended for multispectral imaging because it can only obtain the spectrum of one point on

## Experimental Demonstration of Remote and Compact Imaging Spectrometer ...

In addition, this compact imaging spectrometer was also easily attached to an underwater dome port and a quad-rotor unmanned aerial vehicle to perform underwater and airborne spectral detection.

## A Portable Fiber Optic Real-time Smartphone-based

With the advantages of cost-effective, user friendly and portability, this smartphone spectrometer holds great application potential in many application

## Mobile Spectrometer Operating Manual

The document provides an overview and instructions for operating a mobile spectrometer for metal analysis. It describes the instrument's functions, safety

## Miniature spectrometers inside mobile phones

Miniature spectrometers inside mobile phones How fresh are vegetables and fruits in the supermarket? Just use a mobile phone containing a miniature spectrometer to control the quality of comestibles. To

Inside of an NMR Spectrometer

Inside of an NMR Spectrometer Chemical & Engineering News 27.5K subscribers  
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Spectrometer from Home Materials Guide | StarFish

Build a spectrometer from home materials using a webcam and simple components for real-time, wavelength-calibrated optical analysis.

PublicLaboratory Mobile Spectrometer v4.0 by BradDudenhoffer

PublicLaboratory Mobile Spectrometer v3.1 by Mathew ...mathew thingiverse this is an injection moldable version of braddudenhoffer #39;s public lab spectrometer 3.0. the 3.0 version prints slightly...

Bruker Launches the Portable MOBILE-IR II Spectrometer

This powerful mobile spectrometer will enable users worldwide to bring routine and advanced FT-IR applications to the field. The MOBILE-IR II is intended to

Miniature spectrometers inside mobile phones

Just use a mobile phone containing a miniature spectrometer to control the quality of comestibles. To develop such a device using nano-antennae is the aim of the nanoSPECS-project launched by the

Mobile spectrometer

Find your mobile spectrometer easily amongst the 42 products from the leading brands (Hitachi, Bruker, LECO, ...) on DirectIndustry, the industry specialist for your professional purchases.

This Tiny Device Could Turn Your Phone Into a Lab

This game-changing device replaces bulky traditional spectrometers and could soon be embedded in smartphones, unlocking powerful tools for

Miniature spectrometers inside mobile phones

Your typical mobile phone user—who may be cursing his or her smart phone because the battery runs out after just a few hours of normal usage—may not be

Portable lab analysis: mini spectrometer integrated into

Researchers at the Technische Universität Dresden and the Fraunhofer FEP are developing a novel type of an ultra-tiny spectrometer that fits

## Contact Us

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