

Physics in your pocket: experiments with a smartphone

Abstract: Smartphone-based experiments offer a new and practical way of teaching physics. The sensors inside a smartphone allow teachers to perform quick demonstrations that are engaging and also provide measurable data. A wide range of experiments in mechanics, magnetism, sound and optics can be carried out from middle school to undergraduate levels with very little extra equipment. Our group has been promoting this approach in India through the development of experiments, contributions to national-level assessments, and teacher workshops. This approach is especially valuable in countries where many schools do not have fully equipped laboratories. To support wider adoption, we are developing a low-cost experimental kit designed to work with smartphone sensors.