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Product Name :

Multi-Wire Spark Detector

Product Code :

SLE/EAM/23



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Description :

The **Multi-Wire Spark Detector** (Product Code: SLE/EAM/23) is a piece of physics labequipment in India that gives a memorable, dramatic demonstration of how strongly alphaparticles ionise air. A row of fine wires is supported above a metal plate so that the two formelectrodes separated by a small air gap; with an EHT supply connected, bringing an alpha sourceclose makes the sparking across the gap increase dramatically, both visibly and audibly. Built by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, Ambala, it is a teacher-led radiationexperiment kit for India's senior secondary and college physics departments.

Specifications

Parameter	Detail
Construction	Number of fine wires supported above a metal plate, forming two electrodes separated by a small air gap
Connections	4mm terminals for the EHT supply
Operating point	Occasional sparks occur when the potential across the gap reaches about 4500V
Supply required	EHT power supply capable of providing a negative potential
Demonstrates	Ionising properties of alpha particles; their short range and poor penetrating power
Indication	Visible and audible sparks

Typical Use

The teacher raises the EHT voltage slowly until the gap sits just below steady breakdown, at around 4500V, where only the occasional stray spark appears from background ionisation. When an alpha source is brought near the wires, the ion pairs it creates in the air trigger a burst of sparks that the whole class can see and hear. Pulling the source back a few centimetres, or slipping a sheet of paper between source and wires, makes the sparking fall away almost immediately, a direct and convincing way to show the short range and poor penetrating power of alpha radiation.

This demonstration sits well alongside Geiger counter work in any school physics lab equipment in India used for the radioactivity topic. It is intended for teacher operation only: switch off and discharge the EHT supply before touching the terminals, and handle sealed sources with tongs in line with your institution's radiation safety rules.

Manufacturer

ScienceLab apparatus such as this detector is produced by **Jain Scientific Equipments Private Limited** of Ambala, Haryana, a manufacturer of physics demonstration equipment for schools and universities. See the company profile for details of the organisation.

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