



## INDIAN ACADEMY OF SCIENCES BANGALORE 560 080

### KIT FOR EXPERIMENTAL PHYSICS

As part of the programme to improve science education in the country, the Academy organizes two-week Refresher Courses in Experimental Physics for the benefit of teachers in universities and colleges. For this purpose, a set of experimental circuits has been designed by Prof. R. Srinivasan, a Fellow of the Indian Academy of Sciences. A kit of these circuits and set-ups has now been licensed to a company in Bangalore (Ajay Sensors & Instruments) for commercial manufacture.

A sample of items in the kit and the experiments that can be performed with the kit can be found below:

			
Constant Current Source	Temperature Controller	Signal Generator	Power Amplifier
			
DC Differential Amplifier	Lock-in-Amplifier	Mutual Inductance Coil	Thermal & Electrical Conductivity of Copper
			
Capacitance Circuit	Furnace	AC Bridge Circuit	Stefan's Constant Setup

#### Experiments possible:

Calibration of a thermocouple  
Calibration of a Si diode  
Stefan's constant of radiation  
Thermal and electrical conductivity of copper  
Thermal diffusivity of brass  
Frequency dependence of impedance and phase of a coil  
Frequency dependence of impedance of a capacitor  
Series and parallel resonant circuit  
Low pass, high pass and band pass filters  
AC bridges – Maxwell's, De-Sauty's and Anderson's  
Velocity of sound in air  
Temperature coefficient of resistance of copper  
Bandgap of a semiconductor

Metal insulator transition in La Ca manganate  
Comparison of capacitances and verifying law of addition of capacitances  
Dielectric constant of benzene and dipole moment of acetone  
Thermal relaxation of a serial light bulb  
Demonstration of working of a lock-in-amplifier  
Measurement of mutual inductance with a lock-in-amplifier  
Measurement of low resistance (0.1 ohm) with a lock-in-amplifier  
High resistance by leakage  
B-H curve with integrator  
Thermal conductivity of poor conductors  
Young's modulus by flexural vibrations  
Calibration of a search coil

Several universities, particularly in South India, have introduced these experiments in the curricula of their B.Sc. and M.Sc. courses.

#### **For orders, contact:**



Ajay Sensors & Instruments  
45/17, 12<sup>th</sup> "A" Cross, Gubbanna Indl. Garden, VI Block,  
Rajajinagar, Bangalore 560 010  
Tel: 080-2330 4997; Fax: 080-2338 1040  
e-mail: [ajaysensors@yahoo.com](mailto:ajaysensors@yahoo.com)  
Website: [www.ajaysensors.com](http://www.ajaysensors.com)

Price for Basic Kit of about 25 items: Rs 55,000

VAT, packing and transport extra. Optional items can be bought at additional cost.