



# Spectrochem Instruments Pvt. Ltd.

Survey No: 567, Plots 47,48,49, Peddamberpet, Hayathnagar, Ranga Reddy Dist, 501505

Phones : +91 402 420 1570-74 ( 5 lines), Fax : +91 402 420 1574

Url: [www.enggstudentprojects.com](http://www.enggstudentprojects.com), [www.spectrochemindia.com](http://www.spectrochemindia.com), Email: spectro\_hyd@vsnl.net

## New List of Projects :

1. Colour Intensity Measurement (Liquids)
2. Colour Reflectance Measurement (Solids)
3. Depth of the Medium based on Attenuated Reflectance
4. Depth of the Medium/Liquid level by change in Conductance
5. Flow Monitoring in Tubes
6. Particulates Monitoring using Light Beam Attenuation
7. Automatic Light Beam Shifting of Vehicle's on High Ways
8. Automatic Speed Regulation depending on incoming Vehicle on High Ways(Fuel Injection)
9. Automatic Exhaust Fan Control coupled to gas leak detection
10. Automatic Flame Control for Fuel Efficiency
11. CO<sub>2</sub> & O<sub>2</sub> Monitoring in Green House
12. Leaf Moisture Analyzer
13. Access Control system
14. Data Logger
15. Telephone Call Counter
16. Burglar Alarm system
17. Intelligent Battery Charger
18. Micro Controller Clock
19. DC Motor Control PWM technique
20. Micro Controller to TV interface based clock
21. Line follower Robot
22. Fire & Smoke alarm system
23. Logic Analyzer
24. Build a Carbon Monoxide Sniffer
25. Build the Breath O-Meter
26. Infra Red illuminator
27. Micro Controller to Ethernet Interface
28. Autonomous Robot
29. Built your own Multi-Frequency Digital Signal Generator
30. Build a Simple Infrared Illuminator
31. Teach-In 2002 Lab Work – 5 – Strain Gauge Weighing machine
32. Biopic Heartbeat Monitor
33. PIC Controlled Intruder Alarm
34. SO<sub>2</sub> Detector PIEZO electric Micro Balance Technique.
35. G.P.S. Receiver
36. U.S.B. Connectivity to Micro Controller
37. IRDA (Infra Red data communication protocol implementation)
38. CAN comm. protocol implementation
39. Digital temperature controller – Microcontroller based
40. Fluid level detection – Sonar method
41. Fluid level detection - Air pressure column detection
42. Fluid level detection - Capacitance method
43. Fluid flow measurement (liquid)
44. Home automation using television remote control
45. Robot control using TV remote
46. Baby incubator
47. Industrial automation data acquisition system
48. pH controller
49. DO controller

50. Altimeter --- To measure the altitude
51. GPS & GSM based vehicle tracking system
52. Solar battery charger and shunt regulator
53. Intelligent smoke sensor --- Microcontroller based
54. Burglar alarm system
55. Microcontroller based intelligent glass break detector
56. Air flow sensor
57. USB interface
58. Temperature controlled soldering station
59. Stepper motor based valve controller.
60. HVAC

### ONE WEEK FREE TRAINING ON EMBEDDED SYS.

#### a) Introduction to Microcontrollers

- 1) Introduction to Microcontrollers
- 2) Microcontrollers Vs Microprocessors
- 3) Introduction to AT89C51
- 4) AT89C51 Architecture
- 5) Basic Registers, Addressing Modes
- 6) Special Function Registers
- 7) Instruction Set
- 8) Interrupts & Timers

#### b) Programming Microcontrollers in 'C'

- 1) Introduction to RIDE (Resonance Integrated Development Environment)

#### c) Understanding Basic Devices

- 1) Light Emitting Diodes
- 2) Switches
- 3) Liquid Crystal Displays
- 4) Seven Segment Displays
- 5) Matrix Keyboard
- 6) Relays
- 7) Buzzers
- 8) DC Motors & PWM(Pulse Width Modulation)
- 9) Stepper Motors
- 10) EEPROM & RTC

#### Lab Work:

- 1) Interfacing a Light Emitting Diode
- 2) Interfacing Switches
- 3) Interrupts
- 4) Timers & Counters
- 5) Interfacing a LCD display
  - a) 8 bit mode
  - b) 4Bit Mode
  - c) LCD Menu
- 6) Interfacing a 4x4 Matrix Keypad
- 7) Pulse Width Modulation
- 8) Interfacing a Stepper Motor
- 9) Interfacing a DC Motor
- 10) Interfacing Relay & Buzzer

