

**REGISTRATION FORM**

Name : \_\_\_\_\_

Designation : \_\_\_\_\_

Organisation : \_\_\_\_\_

Address : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Tel. No. \_\_\_\_\_

Fax : \_\_\_\_\_

E-mail : \_\_\_\_\_

Type of Industry / Business \_\_\_\_\_  
\_\_\_\_\_

DD No. \_\_\_\_\_

Date : \_\_\_\_\_

Amount Rs. \_\_\_\_\_

Name of Bank : \_\_\_\_\_

Signature \_\_\_\_\_

Please forward the registration form together with Demand Draft for Rs. 10,000/- Plus service tax of 12.24% (Total Rs.11,224) in favour of "FRP INSTITUTE" to:

**Dr. A. Selvam**  
Executive Secretary

**FRP INSTITUTE**  
N.P. 23/24, Developed Plot,  
Ekkattuthangal, Chennai-600 097.

**FRP Institute** is a professional society registered under Govt. of Tamil Nadu Societies Act-1975. It has an all India membership consisting of scientists, composites specialists, fabricators, raw material suppliers, consultants, designers, defence laboratories, educational institutions etc. The Institute works in close collaboration with the industries and institutions for upgrading the *Composites Technology* and to promote the growth of the Indian composites industry.

FRP Institute works with the following three main objectives in-order to promote the growth of industry:

- i) Education & Training**
- ii) Technology & Quality**
- iii) Growth & Export**

**HRD Programme**

Well-trained man power is an essential requirement for the rapid growth of composites industry. The education and training programmes are to meet this need. The HRD programmes of FRP Institute are planned to achieve this objective.

*For further details and information on the programme.*  
*contact :*

**Dr. A. Selvam**  
Executive Secretary

**FRP INSTITUTE**

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Visit Us : www.frpinstitute.org



**A SIX DAY'S  
TRAINING PROGRAMME  
ON  
FIBRE REINFORCED PLASTICS  
(FRP)  
TECHNOLOGY**

*from*  
**23rd April to 28th April 2007**

*Venue*  
**Hotel Sakithyan**  
#42, Thanickachalam Road  
(Near Hindi Prachar Sabha)  
T.Nagar, Chennai 600 017.

*Organized by*

**FRP INSTITUTE**  
**NP 23 & 24 Developed Plot**  
**Ekkattuthangal**  
**Chennai - 600 097.**

email : frpinst@vsnl.net  
Mobile : +91-98414 26644

## INTRODUCTION

Advanced Fibre Reinforced Composites have emerged as an important material system for industrial and social applications. India has a good industrial base for making various products using these materials. However, there is no corresponding effort to impart education on how to use these materials and manufacture them. FRP Institute is conducting this training programme for engineers to give the basic understanding of the technology, manufacturing methods and applications. The aim is to provide the necessary knowledge to take up employment in composites (FRP) industry or enhance knowledge, if already employed in this industry.

Composites Industry, like information technology, is a knowledge driven industry. Hence acquiring the basic knowledge is very essential for engineers to be effective in the industry for making world-class products.

The training programme is intended to cover the technology of fibre reinforced plastics (FRP) product manufacture employing various processes.

It consists of lectures, practical work and video demonstrations. The lecture sessions are intended to give the basic understanding of raw materials, manufacturing methods, properties and product design. Hand-lay up, compression moulding, filament winding, pultrusion and vacuum infusion moulding processes will be covered in detail. Although the programme covers all types of fibre reinforced plastics, emphasis will be mainly on glass fibre reinforced thermoset plastics.

## COURSE OUTLINE

### Monday 23-04-2007

0900 – 1100 hrs. Introduction to Composites Materials  
1115 – 1215 hrs. Reinforcements  
1215 – 1300 hrs. Slide presentation on Materials.  
1400 – 1700 hrs. Practical Demonstration on materials, laminate making

### Tuesday 24-04-2007

0900 – 1030 hrs. Polyester Resins  
1045 – 1200 hrs. Glass fibre  
1200 – 1300 hrs. Hand lay up  
1400 – 1700 hrs. **Practical demonstration with printed surface mats**, laminate making, Product making.

### Wednesday 25-04-2007

0900 – 1000 hrs. Epoxy & Phenolic Resins  
1000 – 1100 hrs. Fillers, Additives and Core materials  
1115 – 1300 hrs. Sandwich construction  
1400 – 1700 hrs. Practical demonstration on laminates with stiffeners, sandwich construction and repair work, **demonstration of vacuum infusion method.**

### Thursday 26-04-2007

0900 – 1045 hrs. Vacuum infusion methods  
1100 – 1200 hrs. Pultrusion  
1200 – 1300 hrs. Filament winding  
1400 – 1700 hrs. Visit to Industry

### Friday 27-04-2007

0900 – 1000 hrs. Design Considerations  
1000 – 1100 hrs. Materials selection  
1115 – 1300 hrs. FRP Applications in Infrastructure, Chemical, Energy and Electrical  
1400 – 1500 hrs. Moulding compounds, (DMC, SMC) prepreps  
1515 – 1615 hrs. Compression moulding  
1615 – 1700 hrs. Product cost estimation with exercises

### Saturday 28-04-2007

0900 – 1045 hrs. Testing of fibres, resins and Composites  
1100 – 1200 hrs. Polymer concrete  
1200 – 1300 hrs. Finishing operation and Joining Techniques  
1400 – 1500 hrs. Quality Evaluation  
1515 – 1615 hrs. Setting up FRP Industrial production units  
1615 – 1700 hrs. Concluding session

**FOR WHOM:** This programme is suitable for engineers and technologists interested in the manufacture of FRP Products. This programme will also provide the necessary introduction and training in FRP technology for those who are engaged in manufacture of FRP products but do not have formal training in FRP. The programme will also benefit the end users of FRP in understanding the technology, quality control and maintenance.

Science graduates who have necessary aptitude for engineering work will also find this programme useful for enriching their knowledge and skill to take up career in this field.

There is a general shortage of trained composites technologists in the industrial sector. There is no formal education programme in the country to train engineers specifically to this field of technology.

FRP Institute, therefore, strongly recommends to the composites industry to depute newly recruited engineers to get trained. This will certainly improve their capability which will in turn help to improve product quality and profitability of the industry.

# ROUTE MAP

