

## Applications and Products

Many products that are readily used can now be replaced by Composite Materials due to advancements in the understanding of fundamental processes and incorporation of new methodologies in their manufacture.

With a diverse range of markets from commercial to residential, high tech and health, these FRP (fibre reinforced polymers) have an appreciable place in our daily routines making our standards of living possible.



FRP used in power distribution

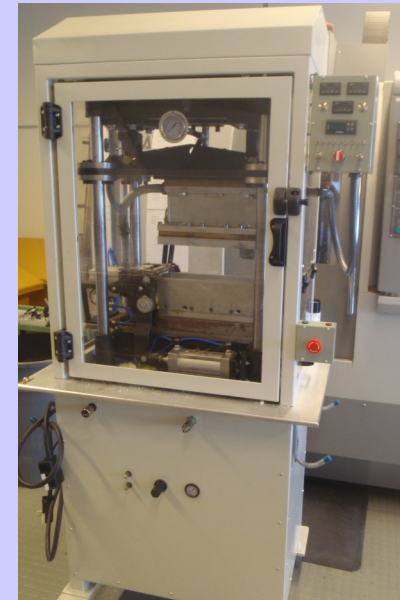
FRP used at home, school or work for recreational areas



Dr. Ghaus Rizvi  
Eric Haghverdian  
Mohammed Riyaz Mansuri  
Rameez Mansuri  
Jagjit Singh

In collaboration with  
Universal Machinery Developments  
20 Alden Rd Uniit 4-5

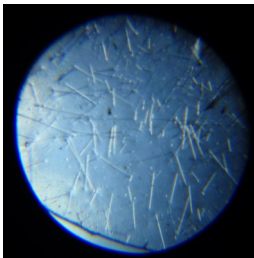
## Fiber Reinforced Composite





**Continuous Alignment (Ideal Case)**

Fiber alignment plays an important role in determining the strength of composite material. Continuous fiber alignment helps in increasing the strength and applicability of these materials.



**Actual randomised fibre orientation prior to Flow induced alignment**



**Fibre alignment is evident post flow induced compression**

Working towards the goal of optimization and research in the field of polymers, this novel method for manufacture of FRP indeed accomplishes the levels of control required for industries and markets alike.

## Advantages of Flow Aligned FRP

- ⇒ Lighter Weight / Higher specific strengths
- ⇒ Corrosion and Chemical Resistance
- ⇒ Adjustable thermal/electrical properties
- ⇒ Adjustable mechanical properties
- ⇒ All are recyclable, PLA variant is biodegradable
- ⇒ Less expensive to manufacture
- ⇒ THE FUTURE OF PLASTICS!

## Tests

Conforming to ASTM D638 testing standards,

Samples prepared and tested exhibited enhanced properties over traditional manufacturing methods.



**ASTM D638 Type 1 exhibiting improved properties during tensile**

Dr. Ghaus Rizvi  
Eric Haghverdian  
Mohammed Rlyaz Mansuri  
Rameez Mansuri  
Jagjit Singh

In collaboration with  
Universal Machinery Developments  
20 Alden Rd Unit 4-5  
Markham Ontario