

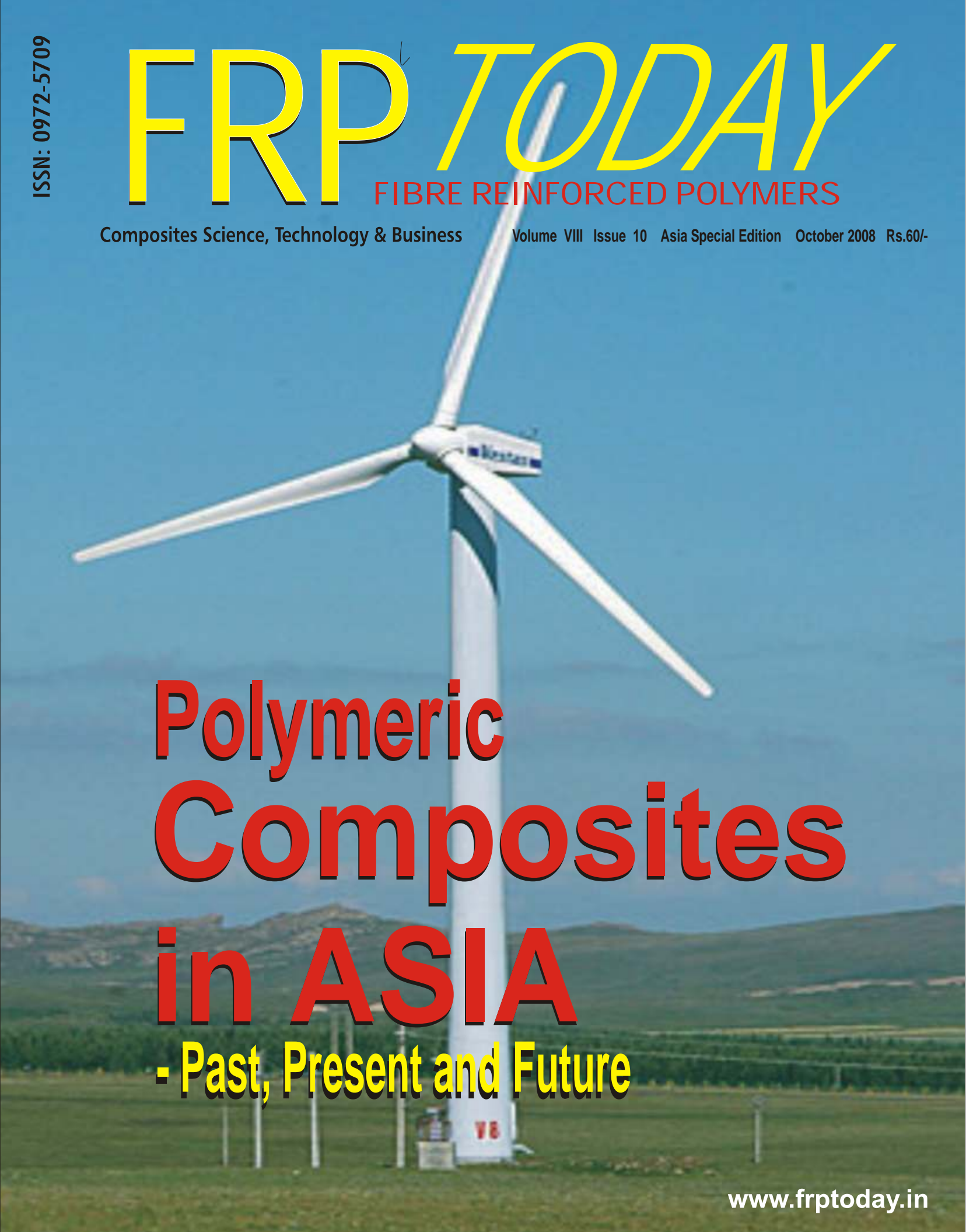
ISSN: 0972-5709

FRP *TODAY*

FIBRE REINFORCED POLYMERS

Composites Science, Technology & Business

Volume VIII Issue 10 Asia Special Edition October 2008 Rs.60/-



Polymeric Composites in ASIA

- Past, Present and Future

www.frptoday.in



World Leaders in Sandwich Cores

DIAB is the world's largest manufacturer of polymer foam sandwich core materials. Its Divinycell range is undoubtedly the most comprehensive available allowing designers, engineers and fabricators to choose the right core material for their specific application.

Divinycell H

The new improved H Grade is intended to be used for the vast majority of composite applications where both hand laminating and closed moulding processes such as infusion are employed.

Divinycell HP

With its high processing temperature, Divinycell HP can be processed at a much higher temperature than other polymer core materials in general use, making it suitable for not only low but also medium temperature prepregs.

Divinycell P

With its M1/F1 rating according to the NF F 16-101 standard and compliance with DIN 5510 S4 ST2 SR2, Divinycell P is particularly suitable for public transport applications where excellent fire, smoke and toxicity (FST) properties are required.

Divinycell F

Developed for commercial aircraft and train interiors, Divinycell F is a significant breakthrough in core material development, offering low FST (fire, smoke and toxicity) properties coupled with good mechanical and processing characteristics.

Divinycell HCP

Divinycell HCP grade has been developed to meet the demand for a high performance, lightweight buoyancy material with excellent characteristics. It is widely used in pipelines, flotation units, diving bells and impact protection structures.

In addition to its extensive product range, DIAB can partner its customers through every facet of the composite design and manufacturing process in order to improve component performance/quality, reduce moulding times and cut material costs.



cores

kits

processing

engineering

training

DIAB Core Materials Pvt. Ltd.

"Swathi Centre" • 5 Ananda Road • Alwarpet • Chennai 600018

Tel: +91 (C) 44-42316768 • Fax: +91 (0) 44-42316770 • E-mail: info@in.diabgroup.com • Website: www.diabgroup.com

Yes.

We've all the **Four Aces** with us!



To win the game, one needs to have aces with him. And we have all of them with us!

With a clear separation of our work in four divisions, we have been able to produce greater results!



♣ **Piping Division**

GRP pipes and fitting for
Potable water
Sewage application
Industrial application

♥ **Chemical plant & Equipment Division**

Storage tanks & vessel
- Horizontal
- Vertical
Pickling tanks with hoods
Air pollution control system
- Scrubber
- Blower
- Hood, Ducting, Stack
Nutsche & sparkler filter
Cooling tower
GRP jackets, Navigational bouy
Industrial piping system

♦ **Building Product Division**

Fiber Glass Rooflite Sheets
Domes
FRP-PUF Sandwiched Doors
FRP and Culture Marble bath tubs
Play System
Water Park Slides
Turbo Ventilator

♠ **Prefab Division**

Prefab Housing Systems
Prefab Cabins
Security Cabins
Telecom Shelters



EPP Composites Pvt. Ltd.

Plot No. 2646, Kranti Gate Main Road, GIDC Lodhika Industrial Estate, Kalawad Road, Metoda Rajkot-360 021, Gujarat, INDIA. Ph. : 02827 - 287059, 60, 61. Fax No. : 02827 - 287063.

! marketing@atikagroup.com, info@atikagroup.com ! Website: www.atikagroup.com

Contents

Advertiser's Index	04	Application Trends	16
From the Editor's desk	06	Tech-know	17
Industry Digest	08	Material Matters	18
<ul style="list-style-type: none">Owens Corning Continues Environmental Footprint Reduction with Upgrades to More Energy Efficient, Lower Emitting Technology		Events	19
Feature	10	Business Guide	21

Cover Page :

Source : GREENPEACE

JEC COMPOSITES

International News in this issue marked us "information by courtesy JEC" is published in agreement with JEC Composites magazine - free subscription at www.jeccomposites.com/magazine-subscription/.

NGN COMPOSITES

A global service and knowledge provider
in Composites Technology

Specialists in Composites, Plastics

Technical Consultancy Services

- Design consultancy
- Product Development
- Guidance to set up Manufacturing units and production process
- Quality assurance

Knowledge Sourcing

- Courses and Training programmes
- Design Software
- E books on Composites Technology

For details contact

No. 18, 32nd Cross Street, Besant Nagar,
Chennai - 600 090, India.

Telefax: 91- 44 - 2446 6305

Ph: 91 - 44 - 2446 4225, (Kerala): 91 - 476 - 2622881

Mobile: 91- 94440 24305

email: ngnair@ngncomposites.com,
ngnair@hotmail.com
or visit

Website: www.ngncomposites.com



FRP Accessories

INDIA

ACCLAIMED AS INVENTORS
INTERNATIONALLY

" PHANTOM VEIL " ®

SURFACE DESIGN TEXTURES



310, Creative Industrial Estate, N. M. Joshi Marg, Mumbai - 400 011. India.
Tel.: +91 - 22 - 40335327 / 40335333. Fax.: +91 - 22 - 40335334.
E-mail: gordon_rodricks@frpacc.com / mahesh_bhansali@frpacc.com
Web: www.frpacc.com

Advertiser's Index

Adex Composites Private Limited	07
CNC Technics Private Limited. India	Back inside cover
Composites Industry Info	16
DIAB Core Materials Private Limited	Front inside cover
Devi Polymers Private Limited	05
EPP Composites Private Limited	01
ERCON Composites	04
FRP Accessories	03
Jushi (India) FRP Accessories Pvt. Ltd.	09
Mechemco	24
NGN Composites	02
PD Fiber Glass	08
Rawji Industrial Corporation	15
Satyen Polymers Private Limited	13
Sanman GRP Solutions	17
SRM International Inc. (India) Ltd.	11
SVS Hydraulics	Back cover



ERCON FRP Products

conforming to international quality and excellence





ERCON FRP CROSS ARMS



Pultruded Fibre Glass Profiles



ERCON FRP GRATINGS & Complete Walkways, Working platforms etc.



ERCON DISCHARGE ROD cum HOT STICK



ERCON FRP CABLE TRAYS for power & instrument cables



ERCON FRP STEP LADDERS for Safe Electrical Maintenance



FRP DOOR FRAME SECTIONS

ADVANTAGES:
High Strength, Long Life, Light Weight, Corrosion Resistant, Electric Insulation, Fire Retardant

ERCON COMPOSITES

F-123, M.I.A., Phase-II, Basni, Jodhpur-342005 (INDIA) Tel.: +91-291-2744064, 2742772, Telefax: +91-291-2741263
E-mail: ercon@ercon-india.com Website: www.ercon-india.com

Moulded for excellence

Devi polymers, the pioneers in polyester moulding compounds bring to the world an array of GRP/SMC moulded products for different applications :



Devi's GRP / SMC panel type water tanks.
World Class Water Storage



Modular FRP Housing System



Tool room with CAD / CAM / CAE facility



Enclosures are water, weather and dust proof

Devi Polymers have expertise in the following areas :

- Polyester Moulding compounds
- Product Design & Engineering
- Mould / Tool Design and manufacture
- Manufacturing of hot pressed compression moulding of SMC/DMC compounds
- SMC / GRP panel tanks & housing system
- SMC / GRP Enclosures
- GRP / SMC (Research Development)



Devi Polymers Private Limited

An ISO 9001 & ISO 14001 Certified Company

Marketing Department: Unit-C : NP 23 & 24, Developed Plot, Ekkattuthangal, Chennai - 600 097.

Tel : 91- 44 - 2225 1502 / 2225 0359, Fax : 91- 44 - 2225 0349.

For Enquires E-mail to: marketing@devipolymers.com

From the Editor's Desk

Honorary Editor

Dr. N.G. Nair
ngnair@hotmail.com
ngnair@ngncomposites.com

Contributing Writers

Gordon Rodricks
gordon_rodricks@frpacc.com

Anilkumar. M.
frpcad@gmail.com

Sham Korpai
shamkorpai@yahoo.com

Layout

K.Sola Gracia

Office Address

Samanthi Publications (P) Ltd.
170, Kakkan Colony, Nungambakkam
Chennai 600 034
Ph: 2817 5694
E mail : frptoday@samanthi.in
Website:www.frptoday.in

Editorial

E mail : editor@frptoday.in

Subscription

E mail : subscription@samanthi.in

Subscription Details

India
Single Copy: Rs. 60/-
Annual Subscription (12 Issues): Rs. 650/-

Overseas
Annual Subscription (12 Issues): US\$ 55
DD / Cheques in favour of
Samanthi Publications Pvt. Ltd.

Advertisement

E mail : advert@samanthi.in

Published by K.R. Pillai on behalf of Samanthi Publications Pvt. Ltd. At 170, Kakkan Colony, Nungambakkam, Chennai - 600 034. and printed by S.Jarina Beevi, at Joh Graphics, No.1/116, Madrasha Street, Shiek Abdullah Nagar, Virugambakkam, Chennai-600092 Editor, K.R. Pillai, responsible for selection of news under PRB Act.

SAMANTHI PUBLICATIONS

www.samanthi.in

Publisher does not give warranty to the content of the material appearing in the magazine, its accuracy, time lines or fitness to any particular purpose. The Publisher disclaims all responsibility for any damage or loss in the use and dissemination of the information.

The views expressed by the Authors are their own and they do not necessarily reflect those of the organization they belong.

All rights reserved by the Publishers ©



FASTER PROCESSING OF COMPOSITES; A NECESSITY

One of the limitations that do really affect the wider use of composites in automobiles is that the manufacturing processes currently being followed are not fast enough to make the composites and to make them compete with the metal forming operations. Metal forming operations can be done at a time as low as 15 seconds. Among the 35 manufacturing processes of thermoset and thermoplastic composites, compression moulding of SMC and the thermoforming and reinforced reaction injection moulding (RRIM) of FRTP are the three processes that have the potential for fast production cycles and can compete with the metal forming processes. Many innovative developments have made these methods still more attractive.

There are still a few technological hurdles to be overcome, but with the use of new bio-processed resin systems, composites have also become environment friendly. Reinforced Reaction Injection Moulding (RRIM) particularly with polyurethane and caprolactum (for Nylon 6) are fast processing methods. While SMC has matured to give components with class A finish, similar finish could not yet be achieved in FRTP components. Such components are now being used for under bonnet applications.

In India, sufficient attention has not yet been given to these methods. The development of these methods need several associated developments including machinery for SMC making, hydraulic and thermoforming presses, process machinery for making glass mat and natural fibre mat thermoplastic sheets, moulds and forming dies etc. There is scope for several units to come up in these processing routes.

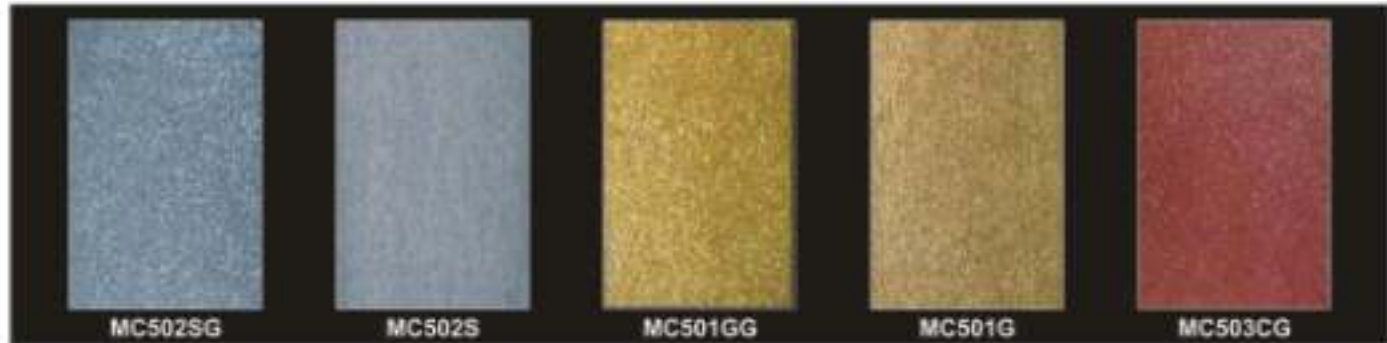
Along with the development of these materials, their recycling options have also to be developed so that environment protection regulations can be maintained.

Dr. N.G. NAIR
Honorary Editor

QUEEN'S VEIL

Designer Glass Surface Tissue / Polyester Veil

Adex congratulates The JEC group for the first ever JEC Show in Singapore, Asia.
On this occasion we introduce a new range of METALLIC TEXTURES.



For full range of designs visit www.queensveil.com



107, V-Mail, Thakur Complex Kandivali (E), Mumbai-400101 • INDIA
Tel. : +91-22-28701571/72 • Fax : +91-22-28701573 • Email : admin@queensveil.com

Owens Corning Continues Environmental Footprint Reduction with Upgrades to More Energy Efficient, Lower Emitting Technology

Upgrades Include Composite Plants in China, India, Spain, Italy and the United States

Shanghai, China Sept. 19, 2008 At the China Composites Show in Shanghai, China, Owens Corning (NYSE:OC) today announced that it is continuing conversion of its composite glass manufacturing facilities to its patented Advantex® technology platform.

The platform offers a higher performing glass fiber and a significantly smaller environmental manufacturing footprint compared with standard E-glass composite processes.

Key environmental and product benefits include:

- Emission reductions of more than 40% carbon dioxide, 75% nitrogen oxide, 40% sulfur oxides, and up to 90% particulates
- More than a 35% reduction in energy consumption
- No Fluorine
- Improved product corrosion resistance
- Better product performance in aqueous environments
- Higher softening-point temperatures and higher tensile modulus

Before its recent acquisition of Saint-Gobain's reinforcements and composite fabrics businesses, Owens Corning had already converted nearly 80 percent of its composite plants to Advantex® technology, and in this new phase, is extending the conversion program to the additional facilities that came with the purchase. Facilities in Hangzhou, China; Alcala, Spain; Thimmapur, India; and Anderson, South Carolina, in the United States have recently been converted. Plant conversions in Doudian, China, and Vado, Italy, will be completed by the end of 2009.

"These conversions allow us to truly deliver on the full promise of realizing the synergies of the acquisition by not only reducing our environmental footprint, but also ensuring we have a more global manufacturing platform to better service our customers with a high-performing product," added Chuck Dana, group president of Owens Corning Composite Solutions.

With the acquired Saint-Gobain reinforcements and composite fabrics businesses, the Owens Corning Composite Solutions business now has 42 production facilities in 16 countries and more than 9,000 employees.

fabrics
high performance composite applications

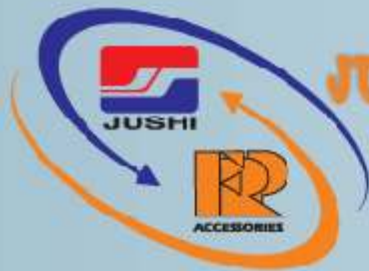
PD FIBER GLASS

We reinforce your product!

chopped strand mats • stitched combinations • woven scrims
multiaxials • single-end roving • complex reinforcement
carbon fiber fabrics • composite fabrics

www.pd-group.com

<p>PD Fiberglass LLC Europe Area 17-4300 Fabrics/Labland Tel: +1 717 475 7777 Fax: +1 717 475 8024 info@pdgroup.com</p>	<p>P.T. (Indonesian) Bndh Ceyksh Medan, Medan, Wg 13 D-47196/050000 Tel: +62 61 203 511 0078 Fax: +62 61 203 511 0078 info@pdgroup.com</p>	<p>PD Fiberglass (India) Pvt. Ltd. Tel: +91 80 27 00 24 70 Fax: +91 80 27 00 24 70 info@pdgroup.com</p>	<p>P. D. FIBERGLASS TECHNOLOGIES CHN Hangzhou, Zhejiang Dongfeng 2 302300 Linyuqiangnan Tel: +86 571 825 51 77 23 Fax: +86 571 825 51 77 23 info@pdgroup.com</p>	<p>P. D. FIBERGLASS Co., Ltd. Santia Evangelina Road 769 Maspalomas C/6, 21 0103, Aguadulce (Gran Canaria), Spain Tel: +34 928 673 00 33 30 33</p>	<p>P. D. Fiberglass (China) Nankai Park 2111 De Sica Road Dongguan, Guangdong, China Tel: +86 755 21 21 64 40 67</p>
--	---	--	---	---	---



JUSHI (INDIA) FRP ACCESSORIES PVT. LTD.

SERVING INDIA AND NEIGHBORING COUNTRIES

FIBREGLASS REINFORCEMENT PRODUCTS FOR FRP

PRODUCTS :

- ◆ Single End Roving
- ◆ Pultrusion Roving
- ◆ Filament Winding Roving
- ◆ Spray Up Roving
- ◆ Roving for Sheet Molding Compounds (SMC)
- ◆ Panel Roving
- ◆ Roving for Pipes
- ◆ Roving for Chopped Strand Mat
- ◆ Roving for Gypsum
- ◆ Roving for Thermoplastics
- ◆ Textured Roving
- ◆ Chopped Strands
- ◆ Chopped Strand Mat
- ◆ Stich-bonded Chopped Strand Mat
- ◆ Stich-bonded Combo Mat
- ◆ Woven Roving
- ◆ Filament Yarn

SALES AND TECHNICAL SERVICES

310, Creative Industrial Estate,
N.M.Joshi Marg, Mumbai - 400 011. India.
Tel. : + 91 - 22 - 40335333.
Fax : + 91 - 22 - 40335334.
E-mail : vishal@jushifrp.com
sushil@jushifrp.com
Web : www.jushifrp.com





FRP / SMC panel type water Tanks (Picture Source : Devi Polymers P Ltd.)

Polymeric Composites in Asia - Past, Present and Future

Mr. S. Sundaram, former Vice President of erstwhile, Saint Gobain Vetrotex/FGP, India reviews the market growth of composites industry in Asia and concludes that the future of polymeric composites, without a shred of doubt, lies in ASIA!! The author can be contacted by E mail ssundaram50@yahoo.com



S. Sundaram

With more than 60% of the world's population and 25% of global (polymeric) composites usage, it was no surprise that Asia, in the mid-90s was hailed as the industry's emerging Tiger!

After more than a decade, Asia currently accounts for almost 36- 38% of global polymeric composites usage and it shows the rapid strides made by this region. In fact, the year 2008 has been forecast by industry pundits as the year in which Asia will be the world's largest market for glass fibre based composites. And, what is the projected forecast for Asia? A staggering 50% of

global polymeric composites usage by 2015! That not only signifies progress, but also indicates a predominant shift towards global domination by Asia in the composites business.

If Asia was the Tiger on the prowl in the not-so-distant past (a decade and a half ago); it presently has the power in its muscles to leap into the future.

North America was the bastion of the polymeric composites industry for several decades. With most of the industrial activities (not only glass fibre manufacture but also downstream

industrial production) moving to Asian locations because of cost economics, there is no option for North America but to hand over the baton to Asia "by default". Ultimately, the bottom line needs to be black and this can be achieved if production (including labour) and energy costs are controlled. While the latter can definitely be achieved by technological advances, the former depends on regional economic trends.

* We Manufacture * We Import * We Export



GLASS FIBER PRODUCTS

- ❖ CSM Emulsion / Powder
- ❖ Woven Rovings / Fabrics
- ❖ Combo, Needle, Stitch Mats
- ❖ Direct / Multi-End Rovings
- ❖ Chopped Strands
- ❖ Surface Tissues / Mats
- ❖ Carbon, Multiaxial Fabrics
- ❖ Mesh, Yarn, Ropes / Tapes

RESINS & ANCILLARIES

- ❖ GP, ISO, Bisphenol, FR
- ❖ Vinyl Ester, Resin System
- ❖ GP / Iso Gelcoats
- ❖ MEKP / Catalysts
- ❖ Cobalt Octates / Accelerator
- ❖ FRP Pigments "Crax"
- ❖ TBPB, BP Paste & DMP

Styrene Monomer, MMA, Maleic Anhydride, Isophthalic Acid, Propylene Glycol, DPG, Octoic Acid, Dinol Flake, DEG, Cobalt Metal, MEK, Hydrogen Peroxide, Toluene, HQ, Wax, PVA, Aerosol Powder



Composite Solutions

SRM International
(India) Pvt. Ltd.

An ISO 9001:2000 Certified Company

Head Office: B-4/311-312, Keshav Puram, Lawrence Road, Delhi-110038,
INDIA Ph.: 91-11-27105642, 27105658 FAX: 91-11-27198800
E-Mail: info@srmindiatd.com, impex@srmindiatd.com

Website: www.srminternationalinc.com www.srmindiatd.com

KOREA THAILAND TAIWAN JAPAN GERMANY TURKEY



Filament Winding Machine (Picture Source : CNC Technics P Ltd.)

In the past, Japan was always considered the powerhouse of the Asian polymeric composites industry. In the early 90s, Japan alone accounted for almost 50% of the Asian composites market with building and residential applications (sanitary ware products, septic tanks and water tanks) being the principal market sector. Over the years, however, there has been a steady decline in Japan's share; only 38% in 1999 and around 22% in 2006. With many production plants getting relocated to China, Japan is struggling to reach the composites production levels of the late 90s. The composites market, in fact, witnessed a drop in 2006 compared to 2005. The decline in the housing sector still continues with tightening of building standards coupled with weak residential investments and household spending. GDP grew at an annualized rate of 3.5% in 2007. The growth momentum in 2008 has slowed down with deteriorating business and consumer confidence and export showing signs of moderating as emerging Asian economies remain a key support (almost 50%) for Japanese exports. GDP growth is projected at 1.4% in 2008 and 1.5% in 2009 according to an IMF report. The composites market is expected to grow at the same rate as GDP. As far as the future is concerned, the contraction in residential markets is slowly being compensated by an expansion in the automotive and rolling stock sector. The composites market is slowly veering to being more technical

with the continued focus on SMC and BMC, not to mention the fibre reinforced thermoplastics (FRTP) market which continues to ride on high temperature resistant engineering plastics.

No doubt, the carbon fibre business is the current mainstay and the future of the Japanese composites business. The extensive use of carbon fibre composites in aerospace applications owes a lot to Toray, Toho and other Japanese carbon fibre manufacturers and processors. Boeing's Dreamliner would not have become a reality, but for the tremendous development work on carbon fibre production carried out by Japanese carbon fibre producers, chiefly Toray. When it comes to cutting-edge technological advances in fibrous reinforcements for composites, the Japanese have few peers. Their commitment to the global automotive sector and relentless pursuit in working towards manufacture of fuel efficient cars has prompted Toray and Mitsubishi (in August 2008) to team up in the development of a new carbon fibre material for cars that also has Nissan and Honda participating in the program. The D-day for mass production of the material is mid-2010 that would result in vehicles being 40% lighter than steel-body cars! It just goes to prove (in general) that when the Japanese think of developing products that are sleek, light and versatile, they really think BIG!!

It took some time for Taiwan to emerge from the 1997 recession following the boom period of the 80s. The Printed circuit board (PCB) industry was the mainstay in the late 90s and fibre reinforced thermoplastics (FRTP) was on

the cusp of the growth curve. Today, PCBs still dominate the Taiwanese composites industry accounting for more than 60%. One significant factor over the years has seen the gradual shift from hand lay-up (now only 29%) to automated processing techniques (pultrusion, RTM, filament winding, SMC/BMC) consequent to high labor costs. Another significant factor has been the growth in FRTP since 2003, with growth rates in the 18-20% range that includes both commodity plastics (PP, PET/PBT, PA) and engineering plastics (PC, PPO, ABS). The development and commercialization of special epoxy resins (by Swancor) for wind turbine blades and suitable for molding by VARTM has been a success story worthy of mention as far as the Taiwan composites industry is concerned.

South Korea's economy is forecast to grow at 3.5% in 2008 (down from 5.3% in 2007) with its GDP surpassing trillion dollars. While export activity remains robust; it is the internal economy which is on slippery ground with plunging consumer confidence, reduced investments and difficulties in the housing market. The composites industry is expected to grow at a rate matching its GDP.

ASEAN continues to plough a lonely furrow and its economy in the region is nothing much to rave about. Ditto for its composites industry growth, which can best be described as sedate?

The Indian polymeric composites industry has had a dream run since 2004 with growth rates exceeding 20% on the trot largely driven by infrastructure, in general and wind energy in particular. The chemical sector has always been the mainstay for composites usage in the past. It still continues to be a major outlet though, in recent times, transportation (road, rail and marine) applications and wind energy have made major inroads resulting a quantum leap in the use of composites. India now ranks

UNSATURATED POLYESTER RESIN QUALIFIES IN ANY APPLICATION WHERE YOU NEED PERFORMANCE

FILAMENT WINDING

CULTURED MARBLE

COOLING TOWER

FIRE RESISTANT

PIPE / TANKS

CLEAR CAST

PULTRUSION

ROOF LIGHT

SOLID SURFACE

RTM

REHABILITATION

BOAT FABRICATION

CORROSION RESISTANT



SATYEN POLYMERS PRIVATE LIMITED

(ISO - 9001 Certified Company)

Head Office:-

307, A TO Z Ind. Estate, G K Marg, Lower Parel, Mumbai - 400 013

Ph- 022 6660 5711/14, 022 4221 0555

web : www.satyenpolymers.com email : satpcly@resadh.com

Regional Office :-

#18, Ashirvad, K.S.R.T.C., 2nd Phase, Bangalore - 78

Ph - 080 26490592

email : venugopal_kb@bsnl.in

A RESADH GROUP COMPANY



Fibre Spraying Plant :
Machine with Cart and 2-Piece

One stop solution for Composite Products

Marketing International

Centre for Excellence - Fibreglass Processing Technology

**Authorised Distributor (INDIA) for Machines & Accessories
manufactured by**

WOLFANGEL®
COMPOSITE TECHNOLOGY

One stop shopping for fiberglass processing equipments fibre spray,
gelcoat spray, RTM, machinery, tools & tackles for moulding
GRP/FRP components

**A Company involved in Product Consultancy
and Turnkey Projects in India and Overseas countries**

307, A to Z (Ind.) Society. Ltd., G K Marg, Lower Parel, Mumbai - 400 013.

Phone : 91-22-6660 5711/14, 91-22-4221 0555 Fax : 91-22-2491 1262

email - ml@resadh.com web - www.satyenpolymers.com

You Rely on us.... We Rely on our Expertise

as the fourth largest wind-power producer in the world having installed close to 1600MW in 2007 out of the total 20GW installed globally in 2007. With major blade manufacturers such as LM, Suzlon and Enercon having production base in India, the country is admirably poised to sustain the momentum in composites usage in the coming years around the 20- 25% mark. India has been achieving a GDP averaging close to 8-9% during the past few years. In keeping with the composites growth trend of 2-2.5% GDP of emerging economies, 20-25% growth rate seems realistic enough. Of significance is the increasing use of composites in automotive applications through SMC/BMC-India has definitely come of age on use of composites in this sector. With resin majors such as Ashland and Reichhold announcing plans to set up plants in India for unsaturated polyester resins; quality specialty resins should trigger a spate of new applications along with wider extension of existing applications. The pipe and underground gasoline storage tank markets got a real fillip with the advent of Amiantit Pipes setting up pipe manufacturing facility in Goa, a few years ago. The pultrusion sector continues to make great gains for onshore and offshore applications. The indigenous production of phenolic resins for composites has proved to be an ideal foil for offshore and other fire retardant applications (rail transport, defense etc.).

And finally, we come to Asia's principal growth driver of polymeric composites, China. China's economy has been growing at a scorching double-digit pace for the past 3-4 years. Consequently, the composites industry has also been registering growth rates between 15 and 20% annually. China's phenomenal composites influence in the Region can be gleaned from statistics that say it all-in 1999, China generated around 29% of Asian composites production (by volume) and 44% in 2005. Globally,

China accounted for 17% of worldwide composites usage in 2005 compared to 7% in 1999. Readers must have come across any number of statistics on multiple aspects of China's phenomenal growth. But a few mind boggling statistics do merit mention. Wind energy is the current buzzword in the global composites industry and China has been a relatively late entrant in this field. Between 2000 and 2006, the wind turbine business in China grew at 40% per year. In 2006, it grew at 105% compared to a global increase of 25% per year! China's spiraling growth in wind energy production is further fueled by the Government's desire to work towards a cleaner environment. At the 2008



Front Fender of TVS King Three Wheeler
(Picture Source : Mahindra Composites Ltd)

Global Wind Energy Conference in Brussels, the Council concluded that Asia would overtake Europe as the biggest wind energy market with as much as 12.5GW of new capacity installed during 2012, up from 5.4GW in 2007. China is expected to lead this growth. By 2010, China is expected to be the biggest annual market globally! The number of domestic turbine manufacturers has been growing rapidly. In 2007, 40 domestic suppliers supplied 56% of the new installations in China, up from 41% in 2006. As far as glass fibre production in China is concerned, the numbers are legion and the global composites industry is aware of the significant inroads made by China in markets across

all continents. With the aforesaid demand for wind energy, one can safely hazard a guess as to the extent to which installed capacity for glass fibres would increase multifold in the next three years to meet local demand, let alone global requirements!

Between 2003 and 2008, the Asian polymeric composites business grew around 20% annually compared to around 5% by North America and Europe. Apart from wind energy, the other principal driver of composites in Asia is the automotive market which grew at 8% annually between 1999 and 2005, compared to the region's composites industry growth of 6% during the same period. With lighter, fuel efficient vehicles being the order of the day, and China set to take over from the U.S. as the world's leading automaker (thanks to high production costs in the U.S.); the prospects for Asian composites growth can best be described as awesome. This is not wishful thinking, but ground reality. Of course, the need to focus on an accelerated shift to automated processing techniques needs no overemphasis. Keeping in mind the availability of skilled labour in Asia, this acceleration is easier said than done. However, this aspect should always be on Asia's composites radar if the region is to achieve greater growth.

The bottom line?

Between 2003 and 2008, the Asian polymeric composites business grew around 20% annually compared to around 5% by North American and Europe. The script has been written:- the coronation of Asia as the new global polymeric composites leader is presently in the making.

Let the world watch the inevitable as the Asian composites juggernaut rolls on the future of polymeric composites, without a shred of doubt, lies in ASIA!!



FIBREGLASS REINFORCED PRODUCTS



Kayak



Moulded Doors



Kiosk



Dustbin



Fire Hose Box



Underground Junction
Box with Cover



Pre-Fabricated Cabins



Roofing Sheets

Rawji Industrial Corporation

MANUFACTURERS ★ EXPORTERS

Sales Office / Works : Ashok Silk Mills Compound, 144, 9lon Bandra Link Road, Near 9lon Station, Mumbai - 400 017, INDIA

Ph. : (91-22) 2409 1339 , 2402 4725. Telefax : 2402 4725.

Admn. Office : * Gulabi House *, 111,116, Kazi syed Street, Maa9d Bundar, Mumbai 400 003, INDIA

Ph. : (91-22) 2342 9598 , 2344 5455, 23448759. Fax : 2341 0694.

E-mail : rawji@venl.com

Website : www.rawji.com

Composites to make missiles lighter, cost-effective

With an intention to make the country's missiles lighter, cost-effective and possess greater hit power, the Defence Research & Development Organisation, India (DRDO) is augmenting its composite materials facilities and capabilities.

An independent centre for composite testing and evaluation is being set up at the Hyderabad-based Advanced Systems

Laboratory (ASL), the premier lab guiding the long range missile Agni programme and providing key technology inputs to other missiles.

ASL already has composites production centre (Comproc), which fabricates the lightweight material for Agni and other missiles. At present, the payload and a small portion (nose tip) of Agni is made of composites, while the rest is metallic.

Progressively, we will make the airframe, the upper stages and payload completely composite. There is lot of interest from the private sector in the composites arena and no dearth of raw materials, he added. Composite material, which can withstand very high temperatures and are robust, finds application in aerospace, the light combat aircraft and satellites.

Your Search Ends Here !!!

Composites INDUSTRY.INFO

www.compositesindustry.info

Comprehensive Online Directory

Composites Manufacturers/ Fabricators

- Fabricators (Listed by Fabrication Technique used)
- Fabricators (Listed by Market Focus)

Suppliers / Materials, Services, Software, Equipment

- Raw Materials
- Unsaturated Polyester Resins (UPR)
- Other Thermoset Resins
- Thermoplastic Resins
- Gel Coats
- Moulding Compounds/Prepregs
- Glass Reinforcements
- Other Reinforcements
- Fillers
- Tissues/Surface Veils
- Additives /Modifiers
- Core materials
- Joining systems
- Tooling/moulds
- Equipment
- Software
- Services

Entry Free

Linking
Composites Fraternity
World Over

Entry in the online Directory is free. To include your business address contact editor@compositesindustry.info

MVP Conducts LRTM training in Malaysia

Magnum Venus Plastech, with Malaysian Distributor Castmech Technologies Conducts First LRTM Training in Malaysia

Kent, WA Magnum Venus Plastech's comprehensive three-day Light RTM training course has become one of the Composites Industry's leading sources for manufacturers to learn how to bring LRTM to their production. Since its introduction last year, the MVP Light RTM training course has been conducted in several countries including Germany, Australia, South Africa, Spain, and now for the first time in Malaysia.

The purpose of this course, conducted by industry expert Charles Tur, is to provide customers, who are considering the move to closed mould technology, with the tools and training they need to make the changeover successful. To that end, the three day training course includes extensive classroom lectures on the

technology and techniques behind the process, the real costs and benefits of using Light RTM, and then moves to hands-on training from tooling the mould and counter mould, and finishes with the injection of a finished part.

The full training course is set up to be a strong transfer of the technology of mould building, and allow each attendee to gain a good basis of knowledge to take back to their company, and easily put into practice. Each person who attends the course receives the comprehensive training course manual, which discusses in detail the practices they learn during the class, as well as other training materials to use as reference once they are back at work. With these tools, our attendees have the knowledge base they need to get their Light RTM operation up and running. Castmech Technologies hosted 10 students for this hands-on course in July

at their facility in Ipoh Perak. Chan YI, owner of Castmech Technologies said, "I enjoy seeing the participants' involvement and discussion. I appreciate Charles's input and useful advice." He continued.

"With this sharing and transferring of knowledge of the LRTM technology, we hope it will educate and assist clients in bringing higher quality and skill into their production". Joan Tracy, Vice-President of International Sales for MVP said, "We are very excited about the success of our first Malaysian LRTM Training, and look forward to watching the growth in this market. This comprehensive three-day training has proven to be a valuable asset to our global customers, and there are already courses scheduled around the world throughout 2009."

For more information on the comprehensive Light RTM Training Course offered by MVP, please visit the M.V.P. Web site at www.mvpind.com.

SANMAN GRP SOLUTIONS

Consultants and Machinery Suppliers of GRP Pipe Plants

- Providing complete plant and equipment for manufacture of GRP pipes and tanks
- Providing technical knowhow, designs and consultancy for GRP pipes and tanks
- Training and assistance in manufacturing operations
- Preparation of Feasibility Report and other viability analysis

Contact: Mr. Manoj Chabria

Tel: 91-9867613278 / 91-22-23681298



SANMAN GRP SOLUTIONS
(Division of Sanman Coatings Pvt Ltd)
27, Guide, 16, L.D. Ruparel Marg
Mumbai - 400006, India
Email: sanmansolutions@gmail.com

New Menzolit compounding plant in China

The new Menzolit compounding plant, which opened September 16, 2008 in Shanghai, will be dedicated to production of materials for domestic Chinese and other Asian market's manufacturers, as well as for international automobile, transportation and electrical manufacturers who are or will be in production in China in the near future.

The arrival of this new plant, which represents a major commitment to the industry in China, creates a new local opportunity for cooperation between Menzolit and long-time industry partner DSM Composite Resins, which has resin production facilities in nearby Nanjing.

SMC-BMC materials have been used in automotive industry for over 50 years, for exterior body panels and other parts. They offer the advantages of weight reduction, stiffness and temperature performance, superior paint-ability, design flexibility and cost

competitiveness, as compared to more traditional products. DSM Composite Resins already supplies resins and other ingredient products used in the SMC-BMC compounding process to Menzolit's four production facilities in Europe. With the opening of the new Shanghai plant, this relationship will expand to China.

Together, the two companies will work to support and educate the local market, with the aim of developing high standards for production quality as they previously have done for the industry in Europe. "Our global customers are truly global, and expect the same level of quality standards in every market. They want a supplier they can trust." said Peter Stachel, Director of Technology at Menzolit.

He believes the potential benefits for the SMC-BMC industry will flow in both directions between the emerging market in China and the more established SMC-

BMC European market. "There is the possibility for the development of new applications in China that may be of great benefit to the European market" Stachel added.

According to Fons Harbers, Business Manager Automotive at DSM Composite Resins, "The arrival of Menzolit in Shanghai brings an important piece to the local SMC industry and its value chain in China. Mutual support from DSM and Menzolit will help professionalise the complete value chain, creating new opportunities for everyone involved."

DSM Composite Resins, a subsidiary of Dutch multinational DSM, received the environment prize of the AVK innovation award for its new resin system Palapreg® Premium. The award was presented at the AVK Conference for reinforced plastics and thermosetting materials that took place on September 22 & 23 in Essen, Germany

Jushi (India) FRP Accessories plans Rs 600 cr glass fibre unit in India

Jushi (India) FRP Accessories Pvt Ltd, a joint venture company between Chinese player Jushi group and FRP Accessories India is planning to pump in Rs 600 crore for setting up a greenfield glass fibre unit at Jhagadia.

The company officials visited the site few months ago and have zeroed in about 50 acres of Gujarat Industrial Development Corporation (GIDC) land in Jhagadia which the state government is in the process of allotting, according to sources in state government.

China-based Jushi Group specializes in manufacturing of fiberglass products and fabrics, with over 200 types and

varieties. The company is a leading producer of fiberglass reinforcements in China.

The Indian JV partner FRP Accessories is one of the largest dealers of fibreglass reinforcement products and has its operations spread across the country.

Jhagadia which is fast emerging as a favourable industrial destination has seen a lot of movement lately.

Ashland India Private Ltd, the Indian arm of US based Fortune 500 company-Ashland Inc has been allotted about 25 acres of land in Jhagadia Industrial Estate, sources said. The company plans

to invest Rs 200 crore for setting up a resin manufacturing unit.

Ceat Ltd is also in the process of setting up a radial tyres manufacturing unit in Jhagadia GIDC for an estimated investment of Rs 500 crore. The company has earmarked about 100 acres for the unit, according to government sources.

Also US-based Kohler, a global heavyweight in kitchen and bathroom products is setting up a ceramic unit in Jhagadia for an estimated investment of Rs 900 crore in a phased manner.

www.frptoday.in

Expoplast 2008
 October 20-21, 2008
 Montreal, Canada.
 Website: www.expoplast.org

Composites Testing and Model Identification
 October 20 - 22, 2008
 Dayton Ohio, USA
 Website: academic.udayton.edu/stevendonaldson/conf_overview.html

Compositech
 October 20 - 24, 2008
 Barcelona, Spain
 Website: www.expoquimia.com

19th International conferences on composite materials
 October 22 - 23, 2008
 Fira Barcelona, Barcelona, Spain
 Website: www.cep-inform.es

Dynamics of Composites Manufacturing
 October 27 - 29, 2008
 Seattle, Washington, USA
 Website: <http://www.acmanet.org/meetings/seattle.cfm>

High Performance Fibers 2008
 October 28 - 29, 2008
 Charleston, South Carolina, USA
 Website: www.compositesworld.com/conferences/high-performance-fibers-20082.aspx

Compotec
 October 29 - 31, 2008
 Italy
 Website: www.compotec.it
Airshow China

November 4 - 9, 2008
 Zhuhai, Guangdong, China.
 Website: www.airshow.com.cn

3rd European bioplastics conference
 November 5-6, 2008.
 Berlin, Germany
 Website: www.european-

9th Pacific Rim Bio-Based Composites Symposium
 November 5-8, 2008
 Rotorua, New Zealand
 Website: www.biobased-composites.com

Feiplar Composites + Feipur
 November 11 - 13, 2008.
 Brazil
 Website: www.feiplar.com.br

Airtec 2008 - International Aerospace supply Fair
 November 11-14, 2008
 Exhibition centre of Frankfurt, Germany.
 Website: www.airtec.aero

China SAMPE conference & exhibition 2008
 November 12-14, 2008
 Shanghai Everbright Convention & Exhibition Center, China
 Website: www.sampe.org.cn

Commercial Aircraft Forum
 November 19-21, 2008
 Crowne Plaza Century Park Shanghai, China
 Website: www.ca-forum.com

Environmental Aspects and Sustainability in Composites
 November 25 - 26, 2008,
 Dolce La Hulpe, Belgium
 Website: www.mindstream.be/JohnsManville/index.php



Samanthi Publications Pvt. Ltd.

No.170, Kakkan Colony, Nungambakkam,
 Chennai - 600 034.
 Ph : 044-28175694 / 28172643

SUBSCRIPTION ORDER FORM NEW RENEWAL

Enter my/our subscription for FRP Today Monthly (Please tick)

Period	India	Overseas
1 Year (12 Issues)	<input type="checkbox"/> Rs.650/-	<input type="checkbox"/> US\$55
2 Years (24 Issues)	<input type="checkbox"/> Rs.1250/-	<input type="checkbox"/> US\$100
3 Years (36 Issues)	<input type="checkbox"/> Rs.1850/-	<input type="checkbox"/> US\$135

- Add Rs.50/- for the outstation Cheques.
- Payment in favour of "Samanthi Publications Pvt. Ltd", payable at Chennai.

ABOUT YOUR BUSINESS / PROFESSION (Please Tick)

- Composites Product Manufacturer
- Composites Product User / OEM
- Material manufacturer
- Material Distributor
- Equipment Manufacturer
- R & D / Institution
- Consultant
- Others (Please Specify)

Name Ms. / Mr. / Dr. _____

Designation : _____

Company / Organization : _____

Address : _____

City : _____

Phone : _____

E-Mail : _____

Current Subscription No. _____

PAYMENT DETAILS

Amount	Cheque / DD No.	Date	Bank
Date	Signature		

Events

The Plastics Industry Strategy Seminar - A strategic review of the prospects for the global plastics industry
November 27th 2008,
Pullman Brussels Airport Hotel,
Brussels, Belgium
Website: www.amiplastics.com/ami/AMIConference.asp?EventID=173

International Polymeric Composites Symposium Exhibition and Workshop
November 28-30, 2008
Tepekule Congress Centre in Ýzmir,
Turkey.
Website: www.polimerik-kompozit.com

Raw Material Shift & Biomaterials
December 3 - 4, 2008
Maritim Hotel Cologne, Germany.
Website: www.raw-material-shift.info

ISAMPE National Conference On Composites : INCCOM 7
December 4 - 5, 2008
National Aerospace Laboratories,
Bangalore - 17
E-mail: inccom7@css.nal.res.in

Fire Resistance in Plastics 2008 - Trends and technical developments in the international flame retardant industry
December 8-10, 2008
Maritim Hotel, Cologne, Germany
Website: www.amiplastics.com/ami/AMIConference.asp?EventID=142

Carbon Fiber 2008
December 8 10, 2008,
Charleston, South Carolina, USA
Website: www.compositesworld.com/conferences/carbon-fiber-20082.aspx

1st International Conference on Composites: Characterization, Fabrication, and Application (CCFA-1)
December 15 - 18, 2008
Kish, Iran
Website: www.netcomposites.com/calendar_details.asp?756

Composites & Polycon
January 15 - 17, 2009
Tampa, Florida, USA.
Website: www.acmanet.org

Pipeline Coating 2009 - Technology and market developments in the global pipeline protection industry
January 26 - 28, 2009
Vienna, Austria
Website: www.amiplastics.com/ami/AMIConference.asp?EventID=151

Composites RTM 2009
February 4 - 5, 2009
Saint-Avold, France
Website: www.ppe.asso.fr

Composite Expo 2009
February 25 27, 2009,
Moscow, Russia
Website: www.mirexpo.ru/eng/exhibitions/composite09.shtml

6th European "Additives & Colors" Conference
March 11-12, 2009
Park Plaza Astrid Hotel,
Antwerpen, Belgium
Website: www.speurope.org

SUBSCRIPTION ORDER FORM

To

FRPTODAY
FIBRE REINFORCED POLYMERS

Samanthi Publications Pvt. Ltd.
170, Kakkan Colony
Nungambakkam
Chennai 600 034.

To publish your Business Address in this Business Guide, please send your Company Name, Address, Phone & Fax numbers, E-mail, Website and group name along with a Cheque or DD for Rs.3000/- (US \$ 90) favouring "Samanthi Publications Pvt. Ltd.", payable at Chennai.

GROUP

**MATERIAL MANUFACTURERS, MATERIAL DISTRIBUTORS,
EQUIPMENT SUPPLIERS, SERVICE PROVIDERS, COMPOSITES FABRICATIONS, OTHERS**

(Please Specify)

MATERIAL MANUFACTURERS

UNSATURATED POLYESTER RESIN

DUJODWALA PAPER CHEMICALS LTD. (DPCL)-

ISO-9001 Certified
907, Raheja Centre, 214, Nariman Point,
Mumbai - 400 021, India.
Tel : 91-22-67522780 / 67522781 /
67522782 / 67522783
Fax : 91-22-67522784
E mail : resins@dpcl.net
Website : www.dpcl.net

K-BOND POLYMERS PVT. LTD.

147, Andrahalli Main Road,
Nadakerappa Industrial Estate,
Viswaneedam,
Bangalore - 560 091.
Post Box. No. 9137
E mail : kbondpolymers@yahoo.co.in
Ph : 28366874, 65956419
Fax No. 28366970
Mobile : 9844283453, 9844057513.

LAMITECH POLYMERS

110/111, M. Phule (Ganj) Peth,
Sampada Complex,
Pune - 411042
Ph : 91-20 26380500
Mobile : 94220 85806
E mail : lamitechpolymers@yahoo.com

MECHEMCO INDUSTRIES

27, Kewal Industrial Estate, Senapati
Bapat Marg, Lower Parel,
Mumbai 400 013, India.
Tel: 91 22 2492 2039 / 2495 1799
Fax: 91 44 2494 5907
E-mail: mechemco@vsnl.com
Website : www.mechemco.com

NIRAV CHEMICAL INDUSTRIES

18, Laxmi Industrial Estate,
Gujarat Bottling Road,
Rakhial,
Ahmedabad-380023
Ph. No.: 079 - 22740654 / 22744082
Telefax No.: 079-22746909
Email : nirav@niravchemical.com

PATEL POLYMERS

C-1/511 GIDC Ind. Estate,
Opp. GIDC Post Office, Odhav Road,
Ahmedabad - 382 41, Gujarat, India.
Ph : 079 - 22971400 / 22971401
Mobile : 09825909629
E mail : sales@polyesterresins.in

PUMAX CHEMICALS PVT. LTD.

50, HACP Colony (Ground Floor)
Opp. Vikrampuri
Secundrabad 500 009
Phone : 2781 0247, 3093 2232
Telefax : 91-40-2784 8157
E-mail : pumax@pumaxindia.com
Grams: "PUMAX"

RISHAB POLYMERS (P) LTD.

18/1B, SVCI Estate, Phase-V, IDA
Jeedimetla, Hyderabad 500 055.
Ph: 91-40-2309 6104, 2309 1650
Fax: 91-40-2309 7040
Mobile: 093910 23105/093910 46237
E-mail: rishab-resins@eth.net
Hyd1_rishabh@sancharnet.in

RUIA CHEMICALS PVT. LTD.

(Mfrs. of Polyester Resins & Construction
Chemicals), No.105/2B, Ultadanga Main
Road, Kolkatta-700067. Ph:033-23562656 /
5932. Fax :033-23563103.
Web : www.ruiachemicals.com
E mail : info@ruiachemicals.com
Chennai off: srpolychem@yahoo.com
Tele fax: 044 - 24765052 / 97105 49493.

SATYEN POLYMERS PVT. LTD.

Unit No : 307, A to Z Indl. Estate,
G.K. Marg, Lower Parel (West),
Mumbai - 400 013.
Ph : 022 6660 5711 / 12 / 13 /14
Fax : 022 - 2491 1262
E-mail : satpoly@resadh.com
Website : www.resadh.com

SKYLINE RESINS AND CHEMICALS

Shed 111, Sidco Industrial Estate,
Thirumazhisai, Chennai - 602 107.
Ph : 044-2479 7499
Mobile : 98400 80343
E-mail: skylinerresins@yahoo.com

VASAVIBALA RESINS(P) LTD.

No.44, (Old No. 151) Eldams Road
Teynampet, Chennai 600 018
Phone: 24358986, 24352394, 24335105
Fax: 24363396
E-mail: vbr@vsnl.com
Website: www.vasavibala.com

FRP PIGMENTS

BHUMIJA ENTERPRISES

W-420, T.T.C., M.I.D.C. Industrial Area,
Near alfa laval, Rabale, Navi
Mumbai - 400 701.
Ph : 022 2769 6974
Fax : 022 2769 6973
Mobile : 09821348458, 09324645582
E mail : bhumija@rediffmail.com

COLOURTECH PRODUCTS PVT. LTD.

Shed No. 2&10, Subbaraju Indl. Estate
Kothanur Dinne, Bannerghatta Road
Bangalore 560 076.
Phone: 080-65592392 / 26851069
Telefax: 080-2653 9821
Mobile: 98450 53698
E-mail: colourtechpigments@vsnl.net
Website: www.colourtechpigments.com

SPECTRA COLOUR PASTES

7-2-1688, Sanath Nagar,
(Behind Bakelite Hylam Ltd)
Hyderabad-500 018, India.
Tel : 91-40-2381 6933/5557 0241
Telefax : 91-40-2381 6933
E-mail: ravikapadia@rediffmail.com

RELEASE AGENTS

TIDE INDUSTRIES

402, Paradise Complex, Sayajigunj,
Vadodara, Gujrat 390 005
Phone 9377841135/9824439587
Email : kaushik@tideind.com
Website www.tideind.com

COBALT OCTOATE (ACCELERATOR)

ARC CHEMICALS PVT. LTD.

Adm. Off. : W-15, M.I.D.C. Industrial Area,
Tarapur Industrial Area, Tarapur, Stn. Boisar -
401 506, Thane (M.S.). Tel : (02525) 329339,
Tele Fax : (02525) 274318.
Reg. Office : 6th Tripathi Sadan, 110, S.V.
Road, Jogeshwari (west),
Mumbai - 400 102. Tel : (022) 26790450,
Tele Fax: (022) 26797299
E mail : arcchemicals@sancharnet.in &
Arcchemicalspl@yahoo.com

COBALT (ACCELERATORS)

BHAGWATI ALLIED PRODUCTS

Plot No. K-216, Midc, Waluj- 431136
Dist. Aurangabad (M.S.)
Tel/Fax: (0240) - 2554727
Cell : 09422206426
E mail : bhagwati_allied@dataone.in

CATALYST

ACME COLOR LAB

No.209/1A, 10th Cross
3rd Main Road, Begur Road,
Bommanahalli Industrial Area
Bangalore -560068.
Phone : 080-25734852
Cell : 9986084624

KRISHNA FIBER GLASS

1-Udaynagar, Street No.20,
Mavadi - Ring Road Crossing,
B/H Moonlight Marble, Rajkot 360004.
Gujarat (India). Ph:0281-2368542
Fax: 0281-2368542 M.:09978920566
E mail : krishna_fiberglass@yahoo.com
Website:www.krishnafiberglass.com

CARBON FIBRE & FABRICS

URJA PRODUCTS PVT.LTD,

423-425, GIDC,
Telephone Exchange Lane, Odhav,
Ahmedabad-382 415
Phone No: 079- 22872277/ 3434
Fax No: 079-22873223
Email: nmej@urjafabrics.com
Website: www.urjafabrics.com

**ORGANIC PEROXIDES,
HARDNER, CHEMICALS**

JAIN & JAIN

W-37, M.I.D.C., Morivali, Ambarnath,
Dist.: Thane - 421 505.
Ph : 022-23423097,
Fax : 23434898
Mobile No. 93242 32831,
E mail : jain_and_jain@hotmail.com
Website: www.jainandjain.in

MATERIAL DISTRIBUTORS

**GLASS FIBRE
REINFORCEMENTS**

FIBRO-TECH CHEMICALS

119, Andheriamore (Opp. Kairali
Ayurvedic Centre)
Mehrauli, New Delhi - 110 030
Ph: 91-11-2680 9901 / 02
Fax : 91-11-2680 9902
E mail : ftc@nde.vsnl.net.in

FRP ACCESSORIES

Office 310, Creative Industrial Estate
N. M. Joshi Marg (Delisle Road), Shree
Sitaram Mill Compound, MUMBAI-400 011
Phone : 022-40335333, 40335327
Fax : 022 - 40335334
E-mail : gordon_rodricks@frpacc.com
Website:www.frpacc.com

FRP Trading Co.

15, Kotkar Industrial Estate,
Vishweshwar Nagar Road,
Near Pravasi Indl. Estate,
Goregaon (E), Mumbai - 400 063.
Ph : 91-22-2873 1693 / 2878 6325 /
2878 6952
Telefax : 91-22-2877 2032
E mail : sales@frptrading.com

SB COMPOSITES PVT .LTD

25, Lake Area, 1st Cross Street
Nungambakkam, Chennai-600 034.
Ph : 2824 0609 / 2817 3160
Telefax : 2817 3180
E-mail : sbcomposite@vsnl.net

SUNTECH FIBRE PVT. LTD

Head Office. 70, Palace Road
Vasanth Nagar, Bangalore-560 052
Ph : 225 3284, 225 8927
E-mail :suntechblr@vsnl.net
Chennai - 2824 0067
Coimbatore : 256 0073
Mangalore : 245 7753

SUNTECH FIBRE PVT. LTD.

D.B.S. Mithila Apartments, Flat No.104,
No. 3, Seetha Nagar Main Road,
Nungambakkam, Chennai - 600 034.
Ph: 2824 0067, Telefax: 044-2822 1334
Cell : 98410 70580
E-mail: suntechfibre@vsnl.net
Bangalore/Coimbatore/Mangalore
2253 284 / 2560073 / 457753

DESIGN TEXTURES

**QUEENS VEIL ADEX
COMPOSITE PVT. LTD.**

107, V-Mall, Thakur Complex,
Off: Western Express Highway,
Kandivali (East), Mumbai - 400 101.
Ph : 022-2870 1571 / 72
Fax No. 022 - 2870 1573
E mail : sushilmore14@gmail.com
Website: www.queensveil.com

**PHANTOM VEIL
FRP ACCESSORIES**

Office 310, Creative Industrial Estate
N. M. Joshi Marg (Delisle Road)
Shree Sitaram Mill Compound
MUMBAI-400 011
Phone : 022-40335333, 40335327
Fax : 022 - 40335334
E-mail : gordon_rodricks@frpacc.com
Website:www.frpacc.com

FRP RAW MATERIALS

AJANTHA ENTERPRISES

151, Greams Road,
Chennai - 600 006.
Ph : 28294788, 45038232
Telefax : 28295221
E mail : ajantha_harisankar@yahoo.com
Madurai Office : 0452 2601073
Coimbatore Office : 0422 2524883.

COVAI SEENU & COMPANY

18/108-A, 7th Street, Tatabad,
Coimbatore - 641 012.
Ph: 0422-249 2208/249 2197/249 6992
Cell: 98433 49290 / 98430 49290/66444
E-mail: cvseenu@md4.vsnl.net

DHANALAKSHMI AGENCIES

15 (Old No. 8) New Street, Off Model
School Road, Thousand Lights
Chennai - 600 006,
Phone: 044 2829 5933 / 2829 0306
Fax: 044 2829 0306
Mobile: 98404 55411 / 98403 23322
E-mail: dhanalakshmifibre@yahoo.com
Website: www.seekandsource.com/
dhanalakshmiagencies

LINK ENTERPRISES

15, Sagar Complex,
Mumbai - Pune Road, Nashik Phata,
Kasarwadi, Pune - 411 034.
Telefax : 020-27124590, 27127824.
E mail: response@elink.co.in
Website :www.elink.co.in

MARK-TECH

#21/2, Dr. DVG Road,
Bangalore - 560 004 Karnataka
Tel : 91-80-26675887
Fax : 91-80-26610346
E mail : office@makr-tech.com
Website:www.mark-tech.com

SHREE FIBRO CHEM

Pune -Avishkar Complex,
502/A, Shaniwar Peth,
Near Joshi Mangal Karyalaya
Opp. Prabhat Theatre, Mehunpura,
Pune - 411 030.
Ph : 020 - 32540384, Fax : 020 - 2448112
E mail : shreefelect@sancharnet.in
Goa Office Ph : 0832 2225627, 3255502

SR POLYCHEM

42A Pillayar Koil St.,
Kolumanivakkam, Chennai - 602 101
E mail : srpolychem@yahoo.com
Ph : 044 - 2362164, 9841416795
9444382195

**ARALDITE EPOXY
RESINS**

JAVANTHEE ENTERPRISES

Door No.GA, "Sai Karuna"
No. 49, Five Furlong road,
Guindy, Chennai - 600 032.
Telefax :22446043 / 22448527
E mail : javantee@airtelmail.in
javantee@vsnl.net

**SURFACE TISSUES &
ACCESSORIES**

MECHEMCO INDUSTRIES

27, Kewal Industrial Estate,
Senapati Bapat Marg
Lower Parel, Mumbai 400 013, India.
Tel: 91 22 2492 2039 / 2495 1799
Fax: 91 44 2494 5907
E-mail: mechemco@vsnl.com
www.mechemco.com

EQUIPMENT SUPPLIERS

**FILAMENT WINDING
MACHINES**

CNC TECHNICS (P) LTD.

3A, Type - 1, Kukatpally Industrial Estate
Hyderabad - 500 072
Ph: 91-040-23078000, 23079414
Fax: 91-040-23075498
E-mail: cnc@cnctechnics.com

PULTRUSION MACHINERY

ASHIRVAD INDUSTRIES

Plot No:1907, Phase-II, G.I.D.C. Indl.
Estate,Chhatral, Dist. Gandhinagar,
[Gujarat] Pin: 382729
Tel:- +91 (0)2764 234017
Fax: +91 (0)2764 232498
Mobile: +91 9825286770.
E Mail : info@ashirvadind.com
: kmgajjar@gmail.com
URL : www.pultrusionmachine.co.in
: www.ashirvadind.com

SVS HYDRAULICS

Shed No.2, APS Agros Work Shop
Complex, H.M.T. Township,
Chintal, Hyderabad - 500054
A.P. India
Tel.:040-23081377
Mobile:09246179726,
E mail :svshydraulics@yahoo.com,
info@svshydraulics.com
URL:www.svshydraulics.com

RTM/VARTM & SPRAYERS

MECHEMCO INDUSTRIES

27, Kewal Industrial Estate, Senapati
Bapat Marg
Lower Parel, Mumbai 400 013, India.
Tel: 91 22 2492 2039 / 2495 1799
Fax: 91 44 2494 5907
E-mail: mechemco@vsnl.com
www.mechemco.com

Machinery & Technology

FRP Materials/Machinery & Technology
POLYMER TECHNOLOGY INDIA PVT LTD

Airtech Infusion Consumables, Carbon / Kevlar Fibre / Roving's, Glassfibre / Roving's, Synthetic Veils (Nexus). FRP Corrugated Sheet Machinery, SMC Door Skins for FRP Doors, Chopper / Spray System. PU Dispenser, Semi permanent Release Agents/ Wax, Silica Rubber. RTM / VARTM Machineries Epoxy / Vinyl Ester Resins. Q C Instruments.

AA-55 Second Street, Anna Nagar Chennai -600040. Phone : 26201753 Fax: 4202 6560. E mail: india@polymertec.com

SERVICE PROVIDERS

CONSULTANTS

NGN COMPOSITES

No. 18, 32nd Cross St., Besant Nagar, Chennai-600 090
Phone : 044-2446 6305 / 2446 4225
Fax : 044-2446 6305
E-mail : ngnair@ngncomposites.com

COMPOSITES FABRICATIONS

COMPOSITE FABRICATORS

INDO COOL Engineering Services

Plot No. 1,2 Cauvery nagar, Madhiravedu, Velappanchavadi, Chennai - 600 077.
E-mail: indocool@hotmail.com
Ph. 26801402 / 29042078
Tele fax: 26801401.

PERMALI WALLACE PRIVATE LIMITED

(Formerly Permal Wallace Ltd)
Regd. Off. & works :Hoshangabad Road Bhopal - 462 011. (India)
EPABX : 2550 085 / 2555 633 /2550508
2552192, GRAM : permali,
Fax : (91-0755-2550504),
E mail :permali@vsnl.com,
Permal@sancharnet.in
Website :www.permaliwallace.com

FRP PRODUCTS

PRAMUKH PLASTICS PVT. LTD.

#17,I Main,VI Cross
60ft Road (Thimmaiah Road)
Off Chord Road, Shivanagar
Bangalore - 560 010, South India
Ph:91-080 23359852,
91-080 23384790,91-080 23301922
Fax: 91-080 23384790
E mail : info@pramukhplastics.com
Website : www.pramukhplastics.com
Mobile : CMD-Udayshankar R. Prabhu (98800 25368)
CEO-Kishore Kumar N.G - (9243134129)

*An ISO 9001 : 2000 Company
PRAMUKH GLAS' FRP Sheets
PRAMUKH DHONI' FRP Gutters
PRAMUKH-VENT' FRP Base Plates
Allied FRP Roofing Systems
'WONDERDOOR' FRP Doors
Allied FRP Products

FRP PRODUCTS

ICP (INDIA) PVT. LTD.,

101, Brigade Road,
Bangalore - 560 025. India.
Tele. No. 080 2554 3817, 2536 7762
Fax No. 080 2557 1903
E mail : icpindia@vsnl.com
Web: www.icpindia.com

Manufacturers of:

FRP Pultruded Gratings,
FRP HT Insulation items, FRP Pultruded Profiles like: Flats, Angles, Rods & Tubes, FRP Woven Cylinders, FRP Tanks & Sheets, FRP Pedestals etc.

Contact Names

C. Deepak, Executive Director,
Mobile No. 98807 15540,
K.V. Balakrishnan
Mobile No. 99029 14313

Listing in

**FRP Today Business Guide
your salesman for 365 days
@ Rs.3000/- (US \$ 90)**

Advertise in

FRP TODAY
FIBRE REINFORCED POLYMERS

for details

E mail : advert@samanthi.in

Phone : **0 94443 85694**

House of Performance Resins

Engineered Resins For Better Future



Mechemco

Commitment to Quality & Consistency

27, Kewal Industrial Estate, Senapati Bapat Marg,

Lower Parel, Mumbai 400 013, INDIA

Tel : +91-22-24922039 / 24951799,

Fax : +91-22-24949907

E-mail : info@mechemco.com

Web-site : www.mechemco.com

Manufacturers of Composite Resins



World Class CNC FILAMENT WINDING MACHINES

From
CNC TECHNICS PRIVATE LIMITED. INDIA

SPECIFICATIONS :

- ▲ DIA 10mm to DIA 5000mm
- ▲ 2 AXES to 6 AXES
- ▲ LENGTHS UP To 15M.
- ▲ MULTI-SPINDLE

OUR CLIENTELE INCLUDES CUSTOMERS from:

- ▲ United Kingdom
- ▲ Saudi Arabia
- ▲ Vietnam
- ▲ Thailand
- ▲ Russia
- ▲ Dubai
- ▲ Australia
- ▲ Malaysia
- ▲ Qatar
- ▲ USA
- ▲ Netherlands
- ▲ India

With a population of over 75 Machines



4 axes CNC winder exported to United Kingdom



Four Spindle Four Axes Machine Winder, USA

ACCESSORIES / ATTACHMENTS:

- ▲ Resin Bath System
- ▲ Book shelf Creels
- ▲ External Unwinding Creels.
- ▲ Mandrel Rotating Station.
- ▲ Component Extractors.
- ▲ Hybrid AL / Ceramic Eyelets.
- ▲ Tape winding Attachment.
- ▲ Filament Winding Software
- ▲ Hydro Testers



Gantry type 4 axes Winder

High standards of engineering coupled with sourcing of critical components from world renowned companies like SIEMENS, RITTAL, IGUS, BONFIGLIOLI, ATLANTA SKF, etc. contribute to the high reliability of the machine.



CNC TECHNICS PVT.LTD.

3A, Type - 1, Kukatpally, Industrial Estate, Hyderabad-500072, INDIA.

TEI : 91+40-23078000, 23079414, Fax : 91+40-23075498

e-mail : cnc@cnctechnics.com, Website : www.cnctechnics.com

WINDING SOLUTIONS



An ISO 9001 : 2000 Company

SVS HYDRAULICS



HYDRAULIC POWER PACKS, HYDRAULIC CYLINDERS
MOBILE EQPTS. MATERIAL HANDLING EQPTS.
SCRAP BALING PRESSES, DEFENCE APPLICATIONS
CUSTOM BUILT EQPTS. ETC.

OFFERS



PULTRUSION MACHINES- 4T,5T,12T CAPACITY

OUR PRODUCTS FOR GRP INDUSTRY

1. GRP PIPE **EXTRACTOR** UP TO DIA 1500mm
2. GRP PIPE **CALIBRATION MACHINE** UP TO DIA 1500mm
3. GRP PIPE **HYDRO TESTER** UP TO DIA 1700mm@ 32 BAR
UP TO DIA 2000mm@ 22 BAR
4. GRP PIPE **BEAM STRENGTH TESTING MACHINE**
5. **DIES FOR MOULDED GRATING.**
6. **PULTRUSION DIES.**
7. **HYDRAULIC PRESSES UP TO 1000 MT.**

ANY OTHER PRODUCTS AS PER CUSTOMER REQUIREMENTS

OTHER PRODUCTS

Office & Works : Shed No. 2, A.P. Agro Workshop Complex, HMT Town Ship, Chintal,
Hyderabad - 500 054, A.P. Telefax : 040 - 2308 1377,
email : info@svshydraulics.com, www.svshydraulics.com