VOLUME 39
NUMBER 3
SUMMER 2002

THE M.C. GILL DOORWAY™

HIGH-PERFORMANCE COMPOSITE PRODUCTS SINCE 1945

What Hath Gill's Lab Wrought?

A Desiccant Air Conditioning System removes moisture from ventilation system air, making it easier to cool. The term “desiccant” means “drying agent.” This system can translate into significant energy savings because it takes less energy to cool *dry* air than to cool *humid* air.

In hot humid climates, the ability to remove moisture (humidity) and begin to cool air before subjecting it to an air conditioning system offers significant cost savings. The air conditioning machinery simply doesn’t have to work as hard to produce results. This significantly reduces energy costs. Systems of this type are widely used in Asia where energy rates are high and the weather can stay hot and humid much of the year.

The “trick” to the efficiency of a desiccant cooling system is the use of honeycomb-filled wheels – called “rotors” – that dry and cool the air

Gillcore™ HA Honeycomb
Heart of a Desiccant Air Conditioning System

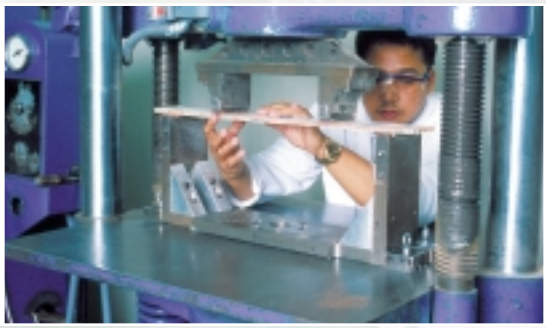
before it is drawn into the cooling system. This technique uses two rotors. In the first one, the fabricated rotor supplied by the M.C. Gill Corporation is coated with a desiccant material by the customer. The second one is a heat exchanger rotor that cools the dehumidified air.

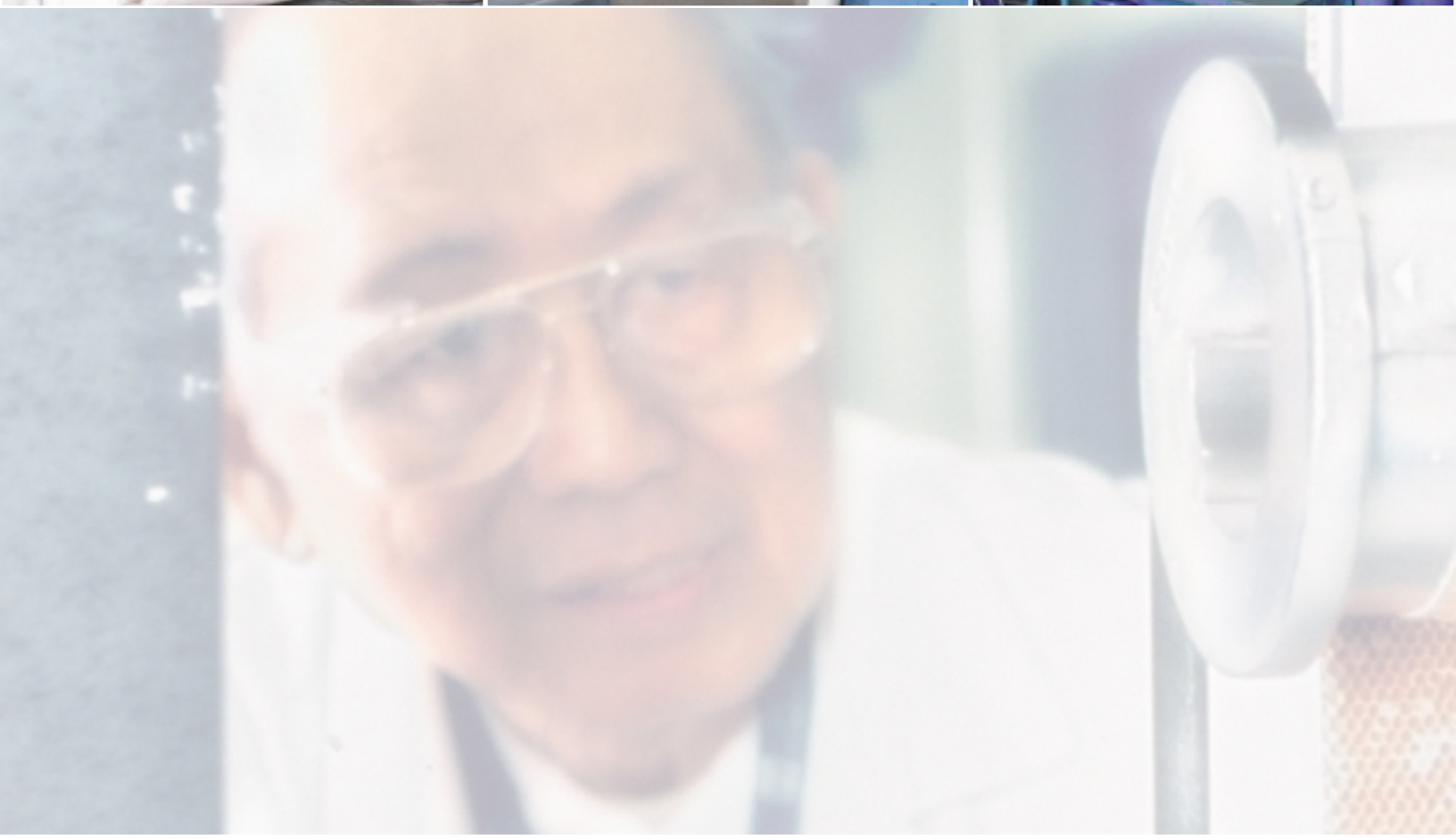
In addition to desiccant cooling applications, the rotors can be used in a single rotor arrangement as an enthalpy (energy recovery) rotor.

A big advantage of desiccant cooling systems is that they have the ability to improve indoor air quality by keeping coils and ductwork dry as well as allowing the introduction of significant quantities of fresh air without paying an energy penalty.

The rotors vary in size from about one foot in diameter up to sizes exceeding eight feet across. M.C. Gill uses 0.055″ cell size Gillcore™ HA honeycomb to manufacture rotors.

Demonstrating the ability to supply these components expands the use of M.C. Gill Corporation Gillcore™ honeycomb into new markets.





Dedication to Research

As an industry leader in the design and manufacture of advanced composites, the M.C. Gill Corporation recognizes the importance of continually developing innovative materials and technology to meet the changing needs of our customers. These efforts not only include new product development and product performance enhancement, but also the application of process improvement and lean manufacturing concepts to achieve cost savings and reduce lead times. Realizing the importance of R&D as an integral part of our strategy to maintain a technical leadership position in the aerospace industry, the M.C. Gill Corporation consistently reinvests about 6% of annual revenues in new product development.

As part of our ongoing commitment to Research and Development, the Corporation recently remodeled nearly 10,000 square feet of laboratory space to allow for expansion of our advanced analytical lab. This facility houses state-of-the-art analytical equipment that is required to expedite product development, optimize processing parameters and ensure the quality of incoming raw materials. In addition to the Analytical Lab, the expansion also involved the purchase of additional test equipment including

Laboratory Expansion

mechanical test machines that are fully computer controlled and integrated into the central R&D database.

Investing in the Future

The significant investment in this facility provides chemists with enhanced analytical capabilities, including state-of-the-art instrumentation:

- Gel Permeation Chromatograph (GPC) that measures the molecular weight distribution and overall sample quality to assure product consistency.
- Rheometer that measures the viscoelastic properties of materials that can also be used to predict a wide variety of material properties.
- Differential Scanning Calorimeter (DSC) that determines the thermal characteristics of a material: melt point, cure properties, decomposition temperatures and reaction kinetics.
- Viscometer that measures the fluid characteristics of a material.
- Thermo Mechanical Analysis instrument that measures the softening point (or melting point) of a sample, which can be used to evaluate the purity of materials. It is also used to determine coefficients of thermal expansion and glass transition temperature.

Future Product Development

Some of the concepts for future product development currently supported by R&D include:

- Advanced Resin Formulation – Tougher resin systems for enhanced in-service durability. Faster-curing resins for reduced processing time.
- Ultra Light Weight Honeycomb and Advanced Composite Panels – Offering weight reduction for next generation military and commercial aircraft.
- Alternative Aramid Honeycomb – A lower cost alternative to traditional aramid materials.
- Ultra Robust, Next Generation Cargo Floor Panel Design – To address the most severe in-service conditions with particular emphasis on abrasion resistance.
- Noise Attenuation – Development work sponsored through the Merwyn C. Gill Foundation Composites Center at the University of Southern California.

Working to Help the Customer

When it comes to our valued customers, the goal is to consistently offer high-quality, competitively priced products that provide innovative solutions for the most challenging applications. In doing so, we often rely on customers' valuable input, including in-service test evaluations to confirm a product's durability. Because M.C. Gill is a fully integrated company, R&D is additionally responsible for initial selection of raw materials and formulating resins needed to produce superior composite products.

With a thorough knowledge of our customers' exacting specifications and the key characteristics that help to predict a product's in-service durability, the M.C. Gill Corporation has developed hundreds of proprietary designs that, in many cases, became industry standards.

Whatever your specific needs are, our team of experienced chemists, engineers and technicians offer years of demonstrated success in developing advanced composite sandwich panels and laminates for the most stringent applications.

New ideas are always hatching in the M.C. Gill Research and Development Lab.

The M.C. Gill Group of Companies

M.C. Gill Corporation

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The M.C. Gill Corporation is the world's largest manufacturer of original equipment and replacement baggage compartment liners for passenger and freighter aircraft. We are one of the largest producers of composite sandwich panels used for aircraft flooring in these markets.

The company also excels in most other types of fiber-reinforced plastics including flat panel composites, bullet resistant ballistic laminates, interior panels for creating structures such as aircraft galleys and bulkheads, honeycomb core and related products.

Alcore

Manufactures a variety of metallic honeycomb cores for aerospace and other applications. Offers extensive special processing capabilities on metallic and non-metallic cores, from simple operations like chamfering to complex processes including roll-forming, 5-axis machining and splicing of different densities into core blankets.

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Alcore Overnight™
Expedited Delivery
email: overnight@alcore.com

Alcore does not sell sandwich panels.
Contact M.C. Gill for these products.

Castle

Specializes in aircraft quality metal parts fabrication, engineering and design. If a piece of metal can be bent, pressed, punched, routed, shaped, molded, welded, profiled or fabricated into a high performance part, Castle has the equipment and experience to do it.

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Alcore Brigantine

Offers broad capabilities in structural core materials technology in Europe, including: Aluminum honeycomb, with special processing expertise and an in-house design office. Manufacture of sandwich panels from simple shapes to extremely complex parts. Advanced aluminum honeycomb shock absorption materials used as a kinetic energy absorber in everything from high-speed trains to automotive safety.

Brigantine propose une offre de compétences très large sur les technologies des matériaux d'âme structuraux en Europe. Fabrication de nid d'abeilles aluminium, expérience de l'usinage de précision de ce matériau, bureau d'études intégré. Fabrication de panneaux sandwich, des grandes séries aux pièces les plus complexes. Etude et fabrication d'absorbeurs de chocs en aluminium pour de nombreuses applications allant du ferroviaire à l'automobile.

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Insoleq – M.C. Gill Europe Ltd.

Manufactures aircraft insulation, details composite panels including various honeycombs and creates complex assemblies using advanced fabrication methods. It also provides warehousing for other M.C. Gill products for quick European delivery.

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Trivia

Many hamsters only blink one eye at a time.

★ ★ ★

In every episode of Seinfeld there is a Superman somewhere.

★ ★ ★

February 1865 is the only month in recorded history not to have a full moon.

★ ★ ★

Montpelier, Vermont, is the only U.S. state capital without a McDonald's.

★ ★ ★

The Pentagon in Arlington, VA, has twice as many bathrooms as are necessary.

★ ★ ★

No word in the English language rhymes with "month."

★ ★ ★

The cruise liner, Queen Elizabeth II, moves only six inches for each gallon of diesel that it burns.

★ ★ ★

The first Ford cars had Dodge engines.

★ ★ ★

Cat's urine glows under a black light.

★ ★ ★

Leonardo Da Vinci invented the scissors.

★ ★ ★

It takes about a 1/2 gallon of water to cook macaroni and about a gallon to clean the pot.

★ ★ ★

Nutmeg is extremely poisonous if injected intravenously.

★ ★ ★

If you have three quarters, four dimes and four pennies, you have $1.19.

You also have the largest amount in coins, without having change for a dollar.

THE FUNNY SIDE

A guy bought his wife a beautiful diamond ring for Christmas.

A friend of his said, "I thought she wanted one of those pretty 4-wheel drive vehicles."

"She did," he replied, "But where in the world was I going to find a fake Jeep!!"

★ ★ ★

There was once a young man who, in his youth, professed his desire to become a great writer. When asked to define "great" he said, "I want to write stuff that the whole world will read, stuff that people will react to on a truly emotional level. Stuff that will make them scream, cry and howl in pain and anger!"

He now works for Microsoft, writing error messages.

Junior had just received his brand-new driver's license. To celebrate, the whole family trooped out to the driveway and climbed into the car for his inaugural drive. Dad immediately headed to the back seat, directly behind the newly minted driver.

"I'll bet you're back there to get a change of scenery after all those months of sitting in the front passenger seat teaching me how to drive," said the beaming boy to his dad.

"Nope," came dad's reply, "I'm gonna sit here and kick the back of your seat as you drive, just like you've been doing to me for sixteen years."

★ ★ ★

A little boy was watching his new baby brother who was crying full force. "Where'd we get him, Mom?" he asked.

"From Heaven," the mother answered.

The little boy wrinkled his nose and covered his ears with his hands and stated matter-of-factly, "This is probably why they didn't keep him there!"