

PTA News Bureau

Tucker (Georgia)-headquartered Lehigh Technologies, a pioneer in micronized rubber powders (MRP) from recycled scrap tyres and other polymers, is developing new ways in using this sustainable product that nobody ever knew before and is working on formulations to increase its application in tyre making.

The opening of its new Application & Development Center (ADC) would help Lehigh work more closely with its growing number of customers to bring their green products quickly to the market, Kedar D Murthy, Vice President and General Manager of Lehigh, told **Polymers & Tyre Asia**.

Amid soaring prices of raw materials particularly rubber, tyre and industrial rubber manufacturers are struggling to cut costs. It is this market that Lehigh is targeting.

It has stepped up research and development work on expanding MRP application in rubber compounds to help customers cut costs while manufacturing sustainable products.

"Today, most tyre and industrial rubber companies are using between 3-5% MRP in their formulations without a loss of physical properties," Murthy said in an interview. "But we are working on formulations to increase the loading levels to 10-12 % without property degradation," he explained.

"With the raw material costs continuing to increase, we are seeing a heightened



NEXT GENERATION PRODUCT

The newly opened Application Development Center of Lehigh Technologies, a leader in micronized rubber powders (MRP), will enable the company to work much more closely with customers to help them bring green products to the market faster. Kedar D Murthy, Vice President and General Manager, says the new facility staffed by high-calibre researchers would explore new applications for MRP in plastics, rubber, asphalt and coatings

interest among tyre companies that are requesting our help to increase the loadings," he said.

They are also keen to take advantage of the fact that Lehigh's products are sustainable and environment-friendly, he pointed out.

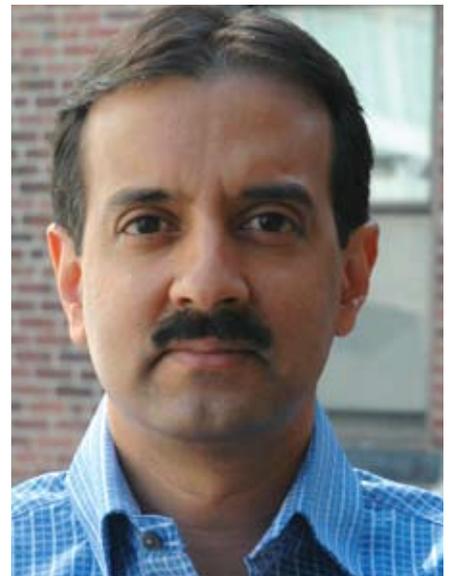
Recognising Lehigh's contributions to sustainability and its visionary leadership and transformational technology, the World Economic Forum gave it the 2010 Technology Pioneer Award. It was conferred on it in recognition of its achievement in the development of life-changing technology that has the potential for long-term impact on business and society.

Lehigh, known as a green materials company that turns end-of-life tyres into MRP that can be used in a wide variety of consumer and industrial applications – new tyres, flooring, rubber goods, asphalt and even coatings and plastics – helps save millions of tyres from going into landfills or being burned. It not only contributes to conserving oil, but also uses no water in the manufacturing process.

The Lehigh's continuing commitment to developing technologies for sustainable industrial development prompted it to set up the ADC for which it acquired about 10,000 sq ft new space adjacent to the existing facility.

ADC houses a wide range of process and test equipment for rubber, thermoplastics, and coatings. It will study MRP's various properties in depth, including morphology and surface characteristics.

"The facility allows us to duplicate many of the processes used by our customers. We



MICRON APPROACH: Kedar D Murthy, Vice President and General Manager

will use the Centre to develop new uses for MRP in plastics, rubber, asphalt, and coatings," he said.

Innovative applications

Elaborating on the work that Lehigh is doing in cutting edge technologies in the areas of rubber compounding, curing, compression moulding, coating and testing, Murthy said that its research capabilities are channelled by the ADC to match with its customers' specific requirements.

"We can thus effectively collaborate in order to help them bring green products to market faster." For example, Lehigh will enable higher recycled content in tyres and cost-effective impact modifiers for polyolefins.

"Thanks to our National Science Foundation grant, we are working with

Georgia Tech University and have learned things about MRP that nobody ever knew before. We recently filed a patent on a way to improve the properties of rubber formulations that use MRP," Murthy said.

Commenting on whether environmentally sustainable MRP that is derived from scrap tyres could be used to replace virgin rubber in full or part in tyre making, Murthy said that its percentage use in compounding is already steadily going up.

For the first time "we have commercial sales in plastics and asphalt. We are continuously looking to expand the use of sustainable MRP into new market segments as well as expand into new geographies such as Asia with existing applications. Next year we will be filing some important patents in rubber formulations."

Asian foray

When asked about Lehigh's plans for China and India, where the economies are growing fast and tyre disposal is becoming a major problem, he said that international growth is definitely a part of its strategy.

"Currently we are working with a major distributor who has a large presence in Asia to understand the market potential and customer requirements. In fact we have commercial sales in Asia today, but India and China are a large part of our growth strategy."

Murthy thinks tyre recycling business in the world is set to grow further in the years to come. "We estimate that there are about 700 million tyres discarded in the Western world including Japan. "

In China and India the dynamics are different when it comes to the reuse of tyres. In these countries, tyres are not really discarded, but put to multiple uses without post-processing.

The industry of repurposing tyres will continue to grow as the world becomes more aware of the environmental problems of end-of-life tyres as well as post-industrial rubber.

The recycling industry is striving to drastically reduce the number of end-of-life tyres being land-filled, developing new markets such as tyre-derived fuel, sports surfaces and mulch.

High value

Lehigh is seeking to develop technologies for MRP in order to utilise it in high-value applications while further reducing the negative environmental impact of end-of-life tyres.

ADC researchers would help and assist customers understand how MRP can be effectively applied in their formulations through critically important fundamental technologies.

ADC has core capabilities in rubber compounding, curing, compression moulding and testing; plastics compounding, injection moulding and testing; and coatings formulation and testing.

Its proprietary manufacturing process turns tyres and other rubber materials into micron-scale, high quality, sustainable powders that are compatible with customers' existing formulations.

The use of Lehigh's MRP helps companies achieve their sustainability

Lehigh is seeking to develop technologies for Micronized Rubber Powder in order to utilise it in high-value applications while further reducing the environmental impact of end-of-life tyres. Its researchers would help and assist customers understand how MRP can be effectively used in their formulations through critically important fundamental technologies.

goals, and at the same time improves their performance attributes. It delivers significant costs savings over virgin raw materials.

"Our advanced technology enables us to provide this unique product," Murthy said. "There are a number of companies that provide similar rubber material for playgrounds or mulch. But they are of lower value, or lower end technology."

"Our technology, along with the capabilities of our ADC, allows for more sustainable rubber to be available to more industries, which is why we call it next generation technology." ▲

