

JK Tyres' Mysuru centre will improve driving experience

Other Tyre Makers Can Also Use Some Of The Facilities

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Mysuru: JK Tyres and Industries Ltd on Tuesday said at the launch of their Raghupati Singhania Centre of Excellence (RFSCOE) at Mysuru that they have invested Rs 150 crore in the tech centre. The company plans to invest another Rs 50 crore in the centre by 2019 and increase its staff from 180 engineers, scientists and technicians to 250 by next year.

Employing over 8,000 people across nine plants, JK Tyres has manufacturing units in Mysuru, Bannore, Kankroli, Chennai and Lakshar (Haridwar), as also three plants and R&D unit in Mexico. JK Tyres, which recently hit a milestone when it had rolled out its 10 millionth truck/bus radial tyre, said the R&D centre is part of an effort to consolidate all research under one roof, including direct operations in Mexico.

One of the sources of revenue for its R&D unit will be usage of its NVH (noise, vibration, and harshness) machines by other tyre makers in the country for testing. The NVH technology involved an investment of Rs 20 crore.

With auto OEMs focused on smoothness of the drive, JK



HIRING TECH TALENT: The new centre will employ 250 people by 2019

Tyres technical director Vijay KR Mishra says that their anechoic chamber helps monitor, analyse and lower sound emitted by the engine and tyres.

"The NVH machine helps study and modify the noise and vibration in cars, trucks and buses. Our anechoic chambers are echo free and have a sound energy absorption between 99-100%," he says. The anechoic chamber also has a reflected sound pressure level of 10% or less—a low sound pressure level (or deviation of sound waves) helps capture sound better with the help of microphones installed on the floor of the chamber.

"We are able to gain maximum sound absorption by lining our walls, ceilings, and floor with wedges with sound absorbing elements and super-soft panels. We can test, for instance, how

much noise is being made by larger patterns in the tread. For instance, earlier, adventure bikes and Bulets used to have large geometric patterns on the tyre for that rugged look, but as we researched we found that smaller patterns with less spacing made for a smoother and quieter ride. So the use cases for this chamber are enormous," said a scientist on the floor. The centre is also trying to make tyres greener by replacing carbon black with silica for bias and radial commercial vehicle tyres.

"This is in line with our earlier achievement of developing India's first full silica-based tyre in 2013," says Mishra. JK Tyres aims to reduce its carbon dioxide emission by 50% by 2019-20, compared to that in 2013-14. The company says one of its pressing complaints is the wear and tear on its tyres.

So as part of its green initiative to improve the lifecycle of a tyre, the R&D centre is also working on nano fillers to improve tyre durability. "We try to line the tyre's inner liner compound with high aspect ratio nano fillers to improve air impermeability, which guards against leakage in tyre pressure, this is 30% more efficient than the regular inner liner. So with higher level impermeability achieved with our air nano fillers, the life of the tyre and fuel efficiency of the vehicle improves. We are also researching use cases for nano clay, carbon nano tube and graphene," said engineers on the floor. An intricate problem for the tyre maker has been how to reduce rolling resistance—the force resisting the free movement of the vehicle—without affecting the mileage and safety of the vehicle. "It is actually one of the strangest things in the industry that when we reduce the rolling resistance (barriers to speed) then it also reduces safety and mileage. So how to achieve a balance was key. We have succeeded in bringing down rolling resistance from 12 kg earlier down to 7.5 kg today," says Dr R Mukhopadhyay, director and chief executive of the research institute.