Zeon Develops New Technology for Biomass-derived Synthetic Rubber (Polyisoprene) in Joint Research with Yokohama Rubber and RIKEN

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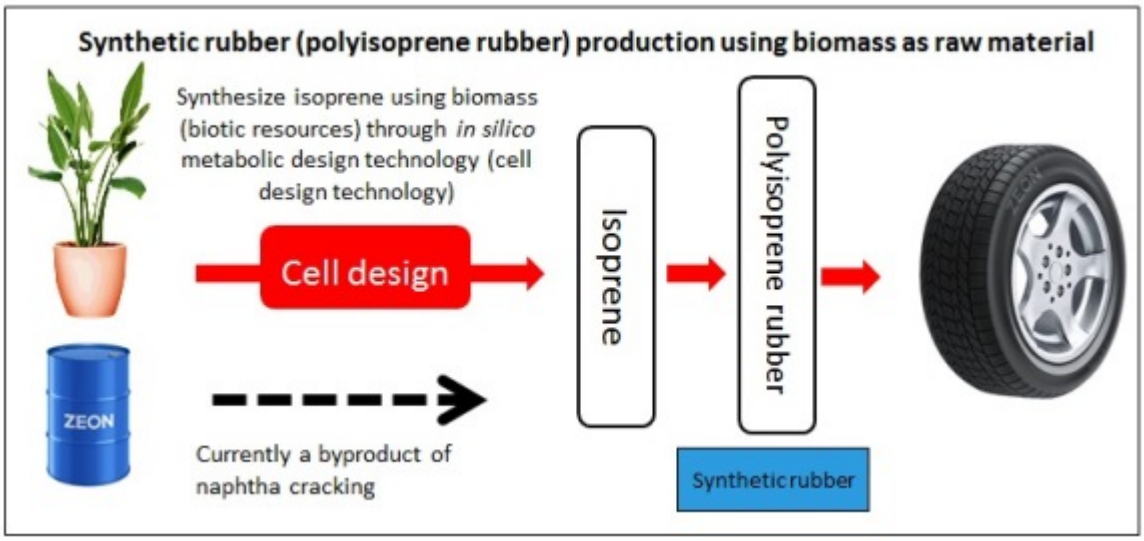
ZEON CORPORATION (President: Kimiaki Tanaka), in joint research with the National Research and Development Agency RIKEN (hereafter “RIKEN”) and Yokohama Rubber Co., Ltd., has succeeded in synthesizing isoprene from biomass (biotic resources). Isoprene is the raw material used to produce synthetic rubber (polyisoprene rubber) for automobile tires. Industrial isoprene is currently produced as a byproduct of the cracking process of naphtha. Development of this new technology will reduce future dependence on petroleum and is expected to contribute to reducing CO2, widely considered to be a cause of global warming.

Zeon, Yokohama Rubber and RIKEN have been engaged in joint research for producing synthetic rubbers from biomass since 2013. We have taken full advantage of the cell design and plant science technologies of the RIKEN Center for Sustainable Resource Science (CSRS). As a result, we were able to discover a new method for synthesizing isoprene by designing an artificial metabolic pathway using in silico metabolic design technology, used for designing the metabolic pathways of a microorganism at a genomic scale on a computer.

We intend to commercialize the technology by the early 2020s. The chemical structure of polyisoprene is similar to that of natural rubber, and the material is often referred to as synthetic natural rubber. The new technology will not only reduce the use of fossil fuel but is also expected to provide a supplemental raw material for natural rubber, the production of which is affected by weather conditions.

RIKEN is Japan’s only multi-discipline research institution for the natural sciences. RIKEN’s CSRS works toward the goal of creating a sustainable society by promoting basic research and is particularly focused on the effective use of plant-microorganism bioprocesses in the field of biofunctions. Yokohama Rubber is a comprehensive manufacturer of tire and rubber products and is actively engaged in research on utilizing biomass derived from plants, which is carbon-neutral (emission and absorption of CO2 are equal). Zeon is a manufacturer of synthetic rubbers and pursues research on polymerization catalyst technology and enhanced performance of synthetic rubbers.



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