Thesis Project: Use of silica blends in tread compounds of the next generation passenger car tyres

Apollo Tyres Global R&D, Enschede

Who are we

Apollo Tires is a tyre manufacturer of Indian origin. Apollo is an ambitious and growing company with factories in India and Europe, as well as sales offices around the world. About 170 employees work at Global R&D in Enschede to develop new (car) tires for Apollo and Vredestein. There is also an office in Frankfurt (Raunheim) with approximately 25 employees.

Material department is one of the key groups of the R&D responsible for development of raw materials, compounds, process establishment (related to raw materials & compounds) and laboratory. Compounding group works in close cooperation with subgroups of material department, Product development (OE & Replacement), Pre-development, Testing and Plant Technology teams in EU plant locations.

Assignment description

Silica is generally applied in tread compounds of passenger car tyres to obtain a nice balance in tyre grip and rolling resistance. Silica is available in various grades, each having its own specific benefits and trade-offs. The use of blends of different silica tyres in the same compound is a new approach to further expand the performance of the compound.

Assignment objective

Assess the use of silica blends in tread compounds and define the best combinations of silica blends for winter, all-season and summer tread compounds.

Your tasks

Perform a literature and patent survey on the available silica materials and the use/application in rubber compounds. Carry out internal investigations (R&D) about tests done so far and perform lab studies (design of experiments) in different tread rubber compounds (summer, all-season, winter). A parallel activity can be the optimization of the silane level or application of silane blends in a specific promising recipe. The project should result in recommendations with the use of silica blends in our future tread compounds.

Your profile

- Enrolled Bachelor or Master student in chemical engineer, chemistry, or other technical engineering study
- Available for 6 months or more
- Strong communication skills in English, any other language is a plus
- Entrepreneurial and business oriented
- Likes to work for rubber materials
- Some experience/ with design of experiments

What do we offer

- A dynamic and innovative internship environment
- Colleagues from all over the world
- Own working space within the office building
- Exposure to other disciplines within our R&D environment.
- An internship allowance of 650 to 850 euros gross per month, based on a full-time position.

Start date: to be arranged
Internship nature: Full-time
For further details contact: hr.rd.eu@apollotyres.com