

Research theme	Industrial commercial product design
Research title	Development of a tyre monitoring system
Researcher	Danny Wilmink
Research period	From January 2016 to August 2016
Company	Apollo Tyres Global R&D BV
Supervisor	Wessel Wits

Background

The assignment was conducted at Apollo Tyres Global R&D BV in Enschede. They pointed out that development of a tyre monitoring system can be regarded as a potentially interesting technological development of importance in the tyre market. To develop the system elaborate research was done first up to conceptual designs and then prototypes were tested at the ETE lab of the University of Twente.

Assignment

This assignment served to start up development of a tyre monitoring system within Apollo. Therefore a major part concerned research to determine the application field. The goals were to develop a model based on which the system can function, to optimally select the subsystems that build up a system, to design functional concepts as a designing direction that should be feasible for future production and to make prototypes that test parts of the concepts for operability and feasibility.

Results

Results on mechanical and electrical performances were derived. The results showed that concepts are actually partially feasible and for the remaining, optimising recommendations are given. The thesis describes the field of system employment and the functionality, and gives concepts with full functional description that are validated with practical tests.

Personal experience

I enjoyed the freedom of exploring the application field whilst working in a job-like setting at the Apollo office. I also enjoyed the conversion of theory into concepts and to convert essential functional elements into prototypes with which feasibility could be supported. Within the office I was like a pioneer on this topic and the responsibility for my work that came with that was another thing that motivated me to gain the best results.