

As a global company, we develop, produce and distribute various permanent magnets, electromagnetic and photoelectric sensors/transducers and measuring instruments for measuring electrical, physical and mechanical variables with applications in automotive industry and renewable energy. In order to strengthen our research and development team, we are looking for a

## **Master/Bachelor Candidate (m/w) to Topic: "TMR (Tunneling Magneto-Resistance) Current Sensors with Applications to Photovoltaics"**

In modern industry and electrical engineering the use of magnetic sensors to measure or detect current, position, movement, direction and other physical parameters is very popular. The most important magnetic sensors are based on Hall Effect, Anisotropic Magnetoresistance (AMR) Giant Magnetoresistance (GMR) and Tunneling Magnetoresistance (TMR).

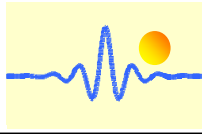
Recently TMR-elements were introduced as novel magnetic sensor for industrial applications. They are thin-film multilayer elements which show greater resistance changes than applied magnetic induction. Compared to Hall-Effect, AMR and GMR elements a TMR element has better temperature stability, higher sensitivity, smaller power consumption, better linearity, and do not require a soft ferrite core, to increase sensitivity.

### **Your tasks**

- State of the Art and literature study of TMR (Tunneling Magneto-Resistance) Current Sensors and photovoltaics
- Examinations of analog and digital TMR current Sensors (Open Loop and Closed Loop) without Soft Ferrite Cores.
- Interface of digital TMR Current Sensors
- Development of TMR Current Sensor prototypes
- Problem solving in serial productions of developed sensors
- Applications of developed sensor
- Documentation of achieved results, etc.

### **Your profile**

- Student (m/w) studying electrical engineering and information technology, mechatronics, mechanical engineering and applied physics with focus on Sensor & measurement technology and Signal Processing
- Good knowledge of physics, electrical engineering/electronics, Signal Processing, especially in electromagnetic sensor & measurement, microelectronic & programming



- Strong team and communication skills, an independent and careful working style, as well as good analytical problem-solving skills
- Good programming skills, EDV-knowledge, knowledge of English & German and routine use of modern means of communication, etc.

If you feel addressed by these challenging and developmental tasks and want to learn more about the performance of our company, please send your meaningful application to ChenYang Technologies GmbH & Co. KG.

We look forward to receiving your application.

### **Contact**

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