

Topic: Development of thick coatings for high temperature applications by High Speed PVD

PVD technology

Topic:

Electric and hybrid vehicles need to become lighter to compensate for the additional weight of the battery and to extend the range. **Die casting** is one of the most productive manufacturing processes for the **thin-walled components**, such as battery housings, which realize the thermal control of the battery through complex cooling channels. In order to be able to establish the die casting of high-melting alloys industrially, solutions must be developed that meet the high demands on the tool material, such as corrosion resistance, wear resistance and withstand the stresses in the process. One approach is the development of **protective tool coatings**.



[Richardssons Verkytsservice AB]

Production of a die casting tool

Requirements:

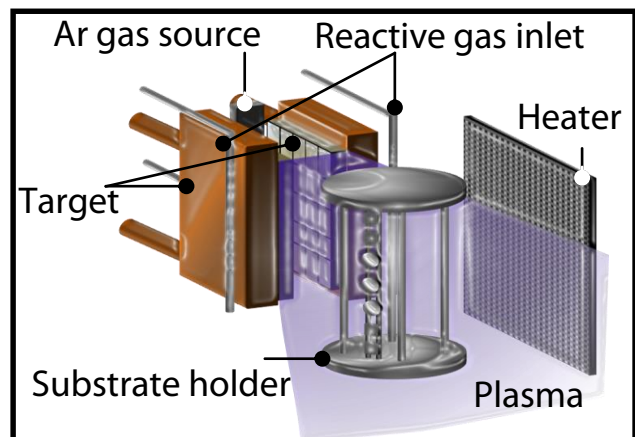
You are studying: Mechanical Engineering, materials science, materials engineering or similar.

You are interested in one of following topics:

- PVD technology
- Development of protective coatings
- Practical works



[SMATRICS GmbH]



HS-PVD coating system at IOT

Aims of this work:

In this work, **thick Al_2TiO_5 coatings** are to be developed by means of the novel **high-speed PVD** technology. This meets the requirements with regard to use in the die casting process. The **main focus** is on:

- Process window development for the production of wear resistance coatings
- Analysis of the high-temperature behavior of the coatings

Are you interested? Please send applications to the contact details below.

Contact:

Parisa Hassanzadegan Aghdam, M. Sc.

Tel: +49 (0)241 80-93694

E-Mail: aghdam@iot.rwth-aachen.de

Institut für Oberflächentechnik
RWTH Aachen University
Kackertstraße 15
52072 Aachen
www.iot.rwth-aachen.de