

## “The Company OSRAM “

OSRAM is a multinational lighting manufacturer with headquarters in Munich, Germany. It is one of the world's two leading light manufacturers in the world. The company covers the entire value chain from components to electronic control gears as well as complete luminaires, light management systems and lighting solutions.

OSRAM was founded on July 1, 1919 by the merger of the incandescent lamp manufacturing activities of AEG, Siemens & Halske AG and Deutsche Gasglühlicht-Anstalt (Auer-Gesellschaft).

The OSRAM brand was registered on April 17, 1906 in Berlin by the Auer-Gesellschaft. At that time, Osmium and Wolfram were needed to produce filaments. The company name: OSRAM Werke GmbH was created combining the names of these two materials. The company logo is a symbolized lamp, which is not only the universal symbol for light but also represents good ideas. On July 8, 2013, OSRAM was spun off from Siemens and listed on the Frankfurt Stock Exchange.

More than 70% of OSRAM revenue comes from energy efficient products. The company's business activities have been focusing on light for over 100 years.

OSRAM is a leading player across for classic lighting as well as new technologies. With LED-based products making up a share of about 39 percent of the total turnover, the company is setting trends with regard to technological changes in the lighting market.

The expenditure for research and development is at approximately 5.5% of the turnover. OSRAM is the world's number one supplier of automotive lamps and LEDs for vehicles. OSRAM is also one of the market leaders in the field of electronic control gear for lamps. Business with optical semiconductors is growing rapidly and has taken on major strategic importance.

At their site in Garching / Munich, OSRAM develops electronic ballasts to dim fluorescent lamps and components for light management systems. In the past, OSRAM produced electronic control gear for modern light sources at the site in Traunreut. In 2009, the company relocated the production to sites in Treviso, Italy and Panyu, China.

Mass production was relocated to China because of cost pressure.

The daughter Company Siteco, a leading producer of technical indoor- and outdoor lighting and client oriented lighting solutions, is stationed at the site in Traunreut.



Figure 1 OSRAM company logo

## Projektskizze IPA17/I

### Arbeitstitel

## Benchmark & Evaluation of Metallization concepts on substrates for Electronics

### Ausgangssituation / Randbedingungen / Zielsetzung

OSRAM is seeking for Innovative Products and Solutions in order to shape the market and could bring OSRAM to have unique selling points for the Customer, even at low prices. Drive Competitiveness is key.

Products feasibility and process costs must be evaluated in detail before starting new product proposals. This have to be done always under the consideration of TCO (Total Cost of Ownership)

To Benchmark and Select right material combination by highest performance and lowest price is mandatory. Our Customer is only willing to pay for the defined live time by always same performance. So the Properties are defined on Marketing / Product Specification and R&D need to deliver by lowest cost.

### Arbeitspakete

#### Metallization concepts on substrates for Electronics

- Analyze Current Situation available on the Market. State of the Art or in Development (2D & 3D Technology)
- Create Market overview and Benchmark possible solutions with Pro's and Con's
- **4 technologies are in scope:**
  - **Printing of materials with different technologies like Stencil or Laser Transfer Printing**
  - **Jetting of materials (based on Additive Manufacturing / Aerosol Jetting)**
  - **MID Process**
  - **Plasma application of materials**
- Evaluation & Analyze of Product Requirements on different substrates: Metal, Polymer, Glass
- Align Product Requirements with OSRAM R&D on LEDr Tube Product
- Prepare Cost-Material-Process comparison TCO of 4 technologies in scope
- Evaluate & Negotiate with external Equipment Suppliers the detailed Processes for the winner technology
- Prepare Sample Production at Supplier with winner technology
- Align with OSRAM Quality the Reliability test plan (based on existing product approval process) / Setup of Test Matrix
- Prepare Management Presentation

### Lösungsansatz / Aufgabenstellung

#### Phase 1:

Analyze: Current Situation on Market, Benchmark of all Solutions, Define Product Requirements, Prepare TCO Decision

#### Phase 2:

Execution: Evaluate & Negotiate with external Equipment suppliers, Produce Sample Products, Final Presentation

### Standort

OSRAM / Garching bei München

### Besondere Anforderungen

MS-Produkte (vor allem Excel, Access)

Gute physikalische Grundkenntnisse

Ideale Teamgröße: 2-3 Studierende