

FUNDED PROJECT GESEENA

A game-changer for process optimization in surface coating

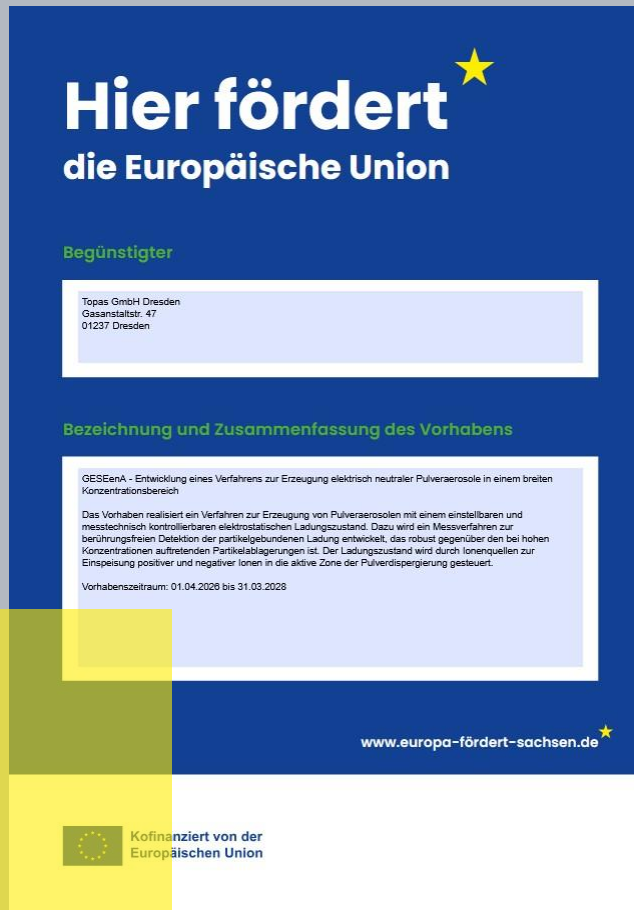
Many modern **production processes** and testing procedures that involve the use of fine powders can be **disrupted by electrostatically charged particles**. This charging can, among other things, cause clogging of piping systems or negatively affect sensor signals.


In our GESEEnA project (“Development of a Method for Generating Electrically Neutral Powder Aerosols Across a Wide Concentration Range”), we are conducting research specifically on this topic. The goal of the project is to **develop an aerosol generation system for powders** that is capable of simultaneously determining and precisely **controlling the charge state** during the aerosolization process. Based on the research results, significant improvements can be achieved not only for medical technology, the chemical industry, nanotechnology, measurement technology, and environmental research, but above all for **surface coating processes**.



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Hier fördert 
die Europäische Union

Begünstigter


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Bezeichnung und Zusammenfassung des Vorhabens

GESEEnA - Entwicklung eines Verfahrens zur Erzeugung elektrisch neutraler Pulveraerosole in einem breiten Konzentrationsbereich

Das Vorhaben realisiert ein Verfahren zur Erzeugung von Pulveraerosolen mit einem einstellbaren und messtechnisch kontrollierbaren elektrostatischen Ladungszustand. Dazu wird ein Mesoverfahren zur berührungsfreien Detektion der partikelgebundenen Ladung entwickelt, das robust gegenüber den bei hohen Konzentrationen auftretenden Partikelablagerungen ist. Der Ladungszustand wird durch Ionenquellen zur Einspeisung positiver und negativer Ionen in die aktive Zone der Pulverdispersion gesteuert.

Vorhabenszeitraum: 01.04.2026 bis 31.03.2028

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GESEEnA enables the optimization of processes in manufacturing and quality control:

- **Minimizing particle loss**
- **Reducing time-related effects**
- **Enhancing particle separation**

Process Optimization in Surface Coating Technology:

- **Reproducible Coating:**
Electrically neutral test aerosols enable **reproducible particle deposition**, which is required, for example, in filter quality control.
- **Homogeneous Distribution on the Substrate:**
Unipolarly charged particles allow for **homogeneous surface loading**.

We are pleased to be able to carry out the GESEEnA project thanks to funding from the European Union (Europe Supports Saxony) and the Sächsische Aufbaubank (SAB), thereby making a significant contribution to **process optimization for the factory of tomorrow**.

Project period: April 1, 2026, to March 31, 2028