Job Description: Corona Surface Treater Development Engineer

Position: Corona Surface Treater Development Engineer

Department: R&D / Engineering

Location: Wenzhou, China

Type: Full-time

Overview

We are seeking a highly skilled and motivated engineer to join our R&D team to design, develop, and optimize **corona surface treatment systems** used for plastics, films, metals, laminates, and other industrial substrates. The ideal candidate will have experience with high-voltage engineering, plasma physics, automation, or industrial machinery design.

Key Responsibilities

1. Product Development

- Design and develop corona treatment equipment, including:
  - High-voltage power supplies (AC or HF generators)
  - Electrode assemblies (ceramic, metal, covered rolls)
  - Dielectric materials and ozone management systems
  - Treater stations and integration modules
- Develop prototypes, perform testing, and optimize system performance.

2. Electrical & High-Voltage Engineering

- Design and validate HV circuits (5–30 kV AC, RF/HF).
- Ensure compliance with electrical safety standards (CE, UL, ISO).
- Conduct simulation and measurement of corona discharge characteristics.

3. Mechanical & Thermal Engineering

- Design mechanical components including treater stations, housings, bearings, cooling systems.
- Analyze heat dissipation, electrode gaps, and dielectric breakdown risks.

4. Process Engineering

- Study and optimize surface treatment parameters:
  - Power density (W·min/m²)
  - Electrode gap and uniformity
  - Line speed vs. surface tension (dyne level)
- Conduct performance testing on various substrates (PE, PP, PET, PVC, AL foil, composites, etc.).

5. Automation & Controls

- Integrate sensors, PLC controls, power control modules, and safety interlocks.
- Work with software/controls engineers to develop user interfaces and diagnostics.

6. Documentation & Compliance

- Create engineering drawings, BOMs, manuals, test reports.
- Support regulatory certifications and customer documentation.

7. Cross-Functional Collaboration

- Work closely with manufacturing, QA, supply chain, and sales teams.
- Provide technical support to customers and participate in onsite commissioning (optional).

Required Qualifications

- Bachelor's degree or higher in **Electrical Engineering, Mechanical Engineering, Mechatronics, Plasma Engineering, or related field**.
- 2+ years experience in:
  - High-voltage systems
  - Plasma discharge technologies
  - Industrial machinery design
- Strong knowledge of CAD tools (SolidWorks, AutoCAD, or similar).
- Understanding of:
  - Dielectric materials
  - Ozone generation and ventilation
  - Surface energy measurement (dyne testing)

Preferred Qualifications

- Experience with corona, plasma, or ozone-based treatment systems.
- Knowledge of **polymer surface science**.

- Experience with PLC/HMI design (Siemens, Omron, Mitsubishi).
- Familiarity with safety standards: IEC 60204, ISO 13849, CE/UL certification.
- Experience with high-frequency (20–40 kHz) HV power supplies.

Soft Skills

- Strong analytical and problem-solving abilities.
- Structured and detailed in documentation.
- Good teamwork and communication skills.
- Ability to manage multiple projects simultaneously.

Performance Indicators

- Reliability and performance of designed equipment
- Reduction in power consumption and production downtime
- Achieving target dyne levels across various substrates
- On-time project delivery
- Quality of documentation and customer feedback