PRODUCT BRIEF

SPALAS™ (Spray Assisted Layer-by-layer Assembly) Coating System

(patents pending)

Advantages

- Precision Thickness Control
- Ambient Operation
- Wet-Chemistry Coating
- Conformal Coating
- Ease of Scale-Up
- Low Cost
- Automated

Applications

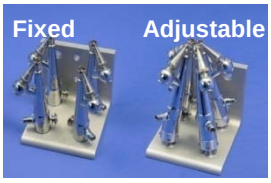
- Anti-Reflection
- Anti-Fog
- Lens Overcoat
- Medical Coating
- Solar Panel Overcoat
- Scientific Research

Overview

Automated SPALAS™ coating system was developed for a new type of nano-enabled optical coatings. SPALAS™ coating is a wet chemistry layer-by-layer absorption process based on chemical or electrostatic interactions between the material building blocks. The coating system allows the applications of optical grade coatings on various substrate materials, including plastics and glass. Advantages of SPALAS™ coating over traditional vacuum or sol-gel based coatings include unparallel low cost, small footprint, ease to use, and scalable to very large size. SPALAS™ coating technology has a broad range of applications, including solar panel light absorption enhancement, anti-reflection coating of optical surfaces, IR optical coatings, anti-fog coatings, and other nanostructured multi-functional coatings.

Solution Delivery Options

Nozzles



Performance Specifications

Substrate Size*	up to 6”x10”
Carrier Gas	N_2, Ar_2, Air
Carrier Gas Pressure	20~40 psi
Scan Speed	programmable
Precursor Flow Rate	adjustable
* 6”x10” is for the standard SPALAS™ coating system. Larger substrates can be coated using a scaled-up coating system.	

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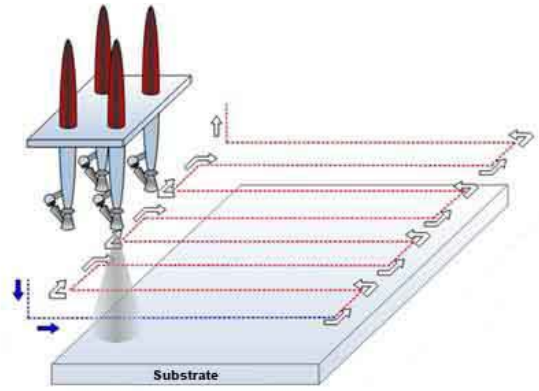
PRODUCT DETAIL

SPALAS™ (Spray Assisted Layer-by-layer Assembly) Coating System

(patents pending)

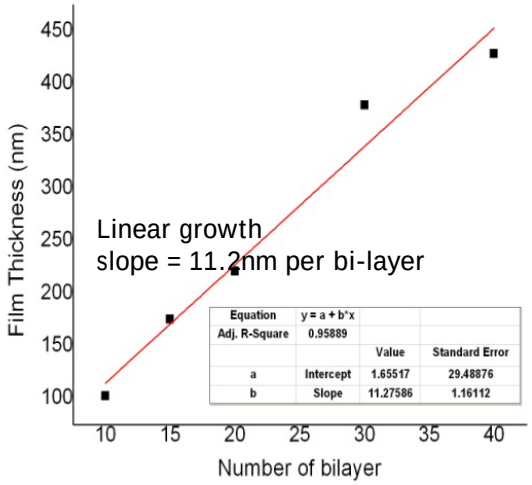
Features

- 4 easily replaced spray nozzles
- Programmed spraying for easy self-assembly coating on substrates up to 6” x 10”
- Up to half liter source solution reservoirs
- Allows application of positive and negative solutions with intermediary washing and drying
- Allows simultaneous application of multiple source solutions
- Coat complex surfaces including tubes and fiber



The SPALAS machine was used to build Layer by Layer SiO_2 nanoparticle structures. The results, evaluated by a major research laboratory, were comparable with dip coated films. SPALAS system coating provided drastically shorter processing times.

Thickness vs. Number of Bilayers



Ordering information

Part number	Description
SPALAS-FA-001	Customized SPALAS spray coating system 6x10 inches substrates. Includes computer/laptop software ,substrate holder and other accessories.
AD_NOZ_001	Adjustable nozzle set
INTE_PUMP_001	Integrated syringe pump (Part A of precision solution delivery system)
APPL_KIT_001	Application kit for solution delivery (Part B of precision solution delivery system)

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