

**scia Multi 680**

**MULTILAYER COATINGS FOR LARGE SUBSTRATES**

## Features & Benefits

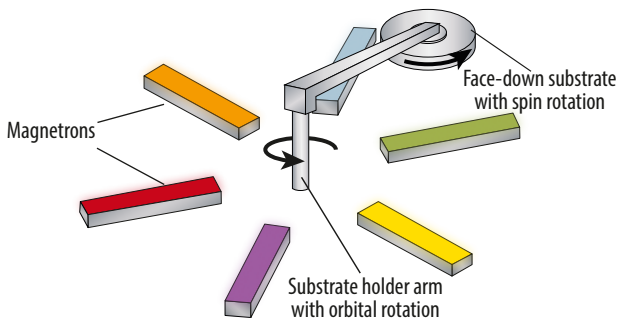
- Homogeneous or gradient films on curved substrates by synchronized orbital and spin rotation
- Up to 7 magnetrons, each with separate housing for individual gas supply and defined particle emission profile
- Optional pretreatment with additional ion beam source
- Carrier based handling system with load lock and two independent substrate positions
- Substrate face-down orientation for minimized particle load

## Applications

- Gradient multilayer coatings of mirrors for soft X-ray and anti-reflective coatings
- Multilayer stacks for X-ray mirrors for beam line and analytic applications
- Multilayer coating for UV and VIS optics

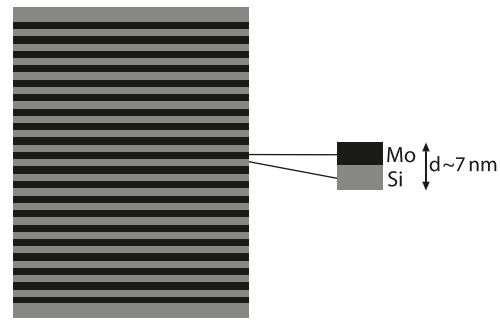
## Principle

- Magnetron Sputtering
  - Circular substrate movement across magnetrons, each orbital rotation completes one period of the stack
  - Compensation of individual emission profiles of the magnetrons by precalculating the orbital rotation profiles



## Application Example

- Typical multilayer stack for soft X-ray mirrors



## Technical Data

<b>Substrate size (up to)</b>	680 mm dia., 130 kg
<b>Sputter source</b>	Up to 7 rectangular magnetrons (600 mm x 90 mm), ion beam source possible
<b>Sputter modes</b>	DC in cw or pulsed mode (1 kW) and/or RF (1 kW, 13.56 MHz)
<b>Typical deposition rates</b>	Cr: 45 nm/min, Si: 22 nm/min, Ti: 22 nm/min
<b>Uniformity variation</b>	< 0.1 % ( $\sigma$ /mean) over 300 mm dia., < 0.2 % ( $\sigma$ /mean) over 450 mm dia.
<b>Base pressure</b>	< $1 \times 10^{-8}$ mbar
<b>System dimension (W x D x H)</b>	7.90 m x 4.40 m x 3.50 m (without electrical rack and pumps)
<b>Configuration</b>	Single chamber with double substrate load lock
<b>Software interface</b>	OPC

