Providing expert PVD solutions worldwide

SPUTTERING COMPONENTS®

IONSCI

Newsletter

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Weihai will be new home for SCI China

Sputtering Components China, an independent distributor for Sputtering Components, is moving its facilities from Shanghai to its own, larger and more modern facility in Weihai, Shandong province.

A major seaport, Weihai is about 435 miles (700 km) north of Shanghai and is surrounded on three sides by the Yellow Sea.

SCI China's **Vincent Wen** said the new location will help provide its customers with reliable products available for their application, and they can better rely on the company as a long-term partner.

"This move will allow us to expand the business coverage and also gives us the opportunity to standardize facility management, which will result in high quality products to our customers," Wen said.

"We plan to expand the business coverage not only for cathodes but also with plasma-related vacuum components."

SCI China's new facility in Weihai will have two factories and an office building. Construction is slated to begin in late spring or early summer.

Weihai is a place with comfortable weather, clean seaside air, a pair of economic development zones and many universities, including the campuses of Shandong University, Harbin Institute of Technology and Beijing Jiaotong University.

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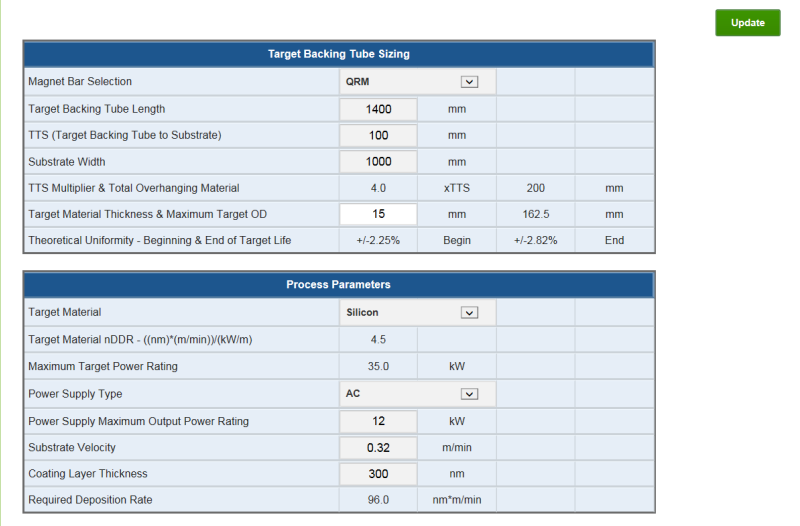
Web-based Sputter Process Tool updated

Sputtering Components has updated its Sputter Process Tool, located on the company website: www.sputteringcomponents.com/calculators.

The new tool combines the deposition calculations with the uniformity simulation to provide an all-in-one solution for helping customers select the correct target length, magnet bar type, TTS, target thickness, power supply type, and operating power for their deposition process.

Combining both tools into one allows users to see the impact that target thickness has on deposition uniformity, both at the beginning and end of the target lifetime.



Update

Target Backing Tube Sizing				
Magnet Bar Selection	QRM			
Target Backing Tube Length	1400	mm		
TTS (Target Backing Tube to Substrate)	100	mm		
Substrate Width	1000	mm		
TTS Multiplier & Total Overhanging Material	4.0	xTTS	200	mm
Target Material Thickness & Maximum Target OD	15	mm	162.5	mm
Theoretical Uniformity - Beginning & End of Target Life	+/-2.25%	Begin	+/-2.82%	End

Process Parameters				
Target Material	Silicon			
Target Material nDDR - ((nm)*(m/min))/(kW/m)	4.5			
Maximum Target Power Rating	35.0	kW		
Power Supply Type	AC			
Power Supply Maximum Output Power Rating	12	kW		
Substrate Velocity	0.32	m/min		
Coating Layer Thickness	300	nm		
Required Deposition Rate	96.0	nm*m/min		

Application spotlight:

Functional and decorative coatings

In medicine, electronic implants, surgical tools, orthopedics…for automobiles, wheels, lighting and reflectors, interior and exterior trim… around the home, faucets, window and door hardware, consumer electronics...

Items made with functional and decorative coatings surround us.

These thin-film coatings are traditionally produced using technologies such as evaporation, cathodic arc or planar magnetron deposition.

However, developments in rotary cathodes (magnetrons), perfected by Sputtering Components, have enabled longer campaign times and thicker, defect-free coatings.

Magnetics with stronger fields allow not only thicker targets but also lower operating pressures, which can increase throw distance and improve coating uniformity of three-dimensional substrates.

Magnetrons are also available with a variety of sputtering angles or even variable sputtering angles by rotating the magnet bar automatically with the Swing Cathode™ feature, which allows the user the ultimate flexibility when coating complex shapes.

Automobile parts are often finished with decorative and functional coatings.

"SCI cathodes are ideal for decorative applications where durability is critical." —*Bryce Anton*, R&D Manager, Vapor Tech

"SCI cathodes are ideal for decorative applications where durability is critical," said **Bryce Anton**, R&D Manager at Vapor Tech a Colorado-based company specializing in thin film equipment to produce surface finishes for plumbing fixtures, home hardware, medical devices, tooling, consumer electronics and more. "Using them we can build thicker coatings with higher gloss than we could with traditional cathodic arc approaches."

Besides the quality improvement, rotary magnetrons are priced competitively. For most functional and decorative-sized coaters, the cost of rotary cathodes is comparable to planar magnetrons. This allows the manufacturer to take advantage of the higher material utilization provided by cylindrical cathodes.

In addition to the material savings, users of cylindrical cathodes need to change targets less often, in some cases as little as one-tenth as often as with planar targets.

"Our customers value the longevity of the target material's life in high-volume manufacturing and the stability of the process," Anton said. "Maintenance is much easier than with conventional planar magnetrons."

As well as the various rotary magnetron products, SCI offers the envis-ION™ Dual Magnetron Pretreatment for functional and decorative applications. The DMPTS is capable of providing effective pre-treatment of plastic substrates as far as 200 mm from the source.This source is capable of operating using standard sputtering power supplies and at standard sputtering pressures.

Around the globe, people use products with high quality and durable decorative and functional finishes every day. Many are made with technology provided by Sputtering Components.

Start SVC TechCon with 5K run/walk

Get a healthy start to the SVC TechCon 2018 with a 5K fun run/walk to benefit the SVC Foundation.

Sign up when you register for TechCon 2018, or email **Sarah Williams**: sarahw@sputteringcomponents.com.

This popular annual event will take place around the grounds of the exhibition site, the Gaylord Palms Hotel, Tuesday, May 8 at 6:00 am.

- $30/person
- Participate solo or on a team; Minimum four members/team
- Top team wins traveling trophy
- Fastest four members of top team earn individual prizes
- Includes technical t-shirt
- Free coffee at the start and a post-run light breakfast

The SVC Foundation supports enterprising students and practitioners who have an interest in furthering their education in vacuum coating technology. The Foundation also grants travel awards to students to attend and present technical papers at the annual SVC Technical Symposium. In 2017, the SVC Foundation awarded $23,000 in scholarships and travel grants.

SCI sets 2018 trade exhibition schedule

Sputtering Components is excited to connect with customers and potential customers at 11 trade exhibitions currently scheduled for 2018. Three shows will take place during the first quarter.

The NCCAVS Equipment Exhibition is February 22 at the Holiday Inn Airport Hotel in San Jose, CA. This annual event showcases products and services of companies supporting vacuum-related industries. Attracting more than 100 exhibitors and about 700 attendees, the NCCAVS Annual Equipment Exhibition is the largest sponsored by any AVS Chapter.

After that, it's on to Fountain Hills, Arizona, March 6-7 for the International Microelectronics Assembly and Packaging Society's (IMAPS) 14th International Conference and Exhibition on Device Packaging. The conference is a major forum for the exchange of knowledge and provides numerous technical, social and networking opportunities to leading experts in these fields.

A week later, we head overseas to Shanghai for Semicon/FPD China, March 14-16. This large show highlights the rapidly growing semiconductor and flat-panel display fabrication equipment market.

For more information, please see the trade show schedule on our company website.

AVS Science and Technology of Materials, Interfaces, and Processing

iMAPS International Microelectronics Assembly and Packaging Society

SEMICON CHINA 30 YEARS

Ethan Kapler joins SCI design team

Design engineer **Ethan Kapler** has joined Sputtering Components' rapidly expanding team.

The hire of Kapler, who is based out of Sputtering Components' manufacturing facility in Owatonna, MN USA, comes off the back of a busy 2017 for the company.

According to **Robert Meck**, Director of Engineering, Kapler will play a key part in the company's continuing aggressive growth trajectory.

Kapler grew up in Lakeville, Minnesota, not far from Owatonna. He attended the University of North Dakota in Grand Forks, where he majored in Mechanical Engineering. He graduated in December of last year.

"I pursued a position at SCI because I could tell it was somewhere I would want to work," Kapler said. "When I came to interview with the team, everyone knew the company's processes, they knew the products, and they knew what set SCI apart from the rest of the rotary cathode market. I could tell that the company has a good understanding of its direction for the future and a good team of employees, and that's important to me."

Ethan Kapler is SCI's new design engineer.

After spending a few weeks learning about Sputtering Components' design applications and processes, Kapler is currently working on product design elements and customer orders. He has also spent time with the R&D group and the assembly team in order to gain a better understanding of SCI's products and manufacturing processes.

"The team at SCI has been very helpful in bringing me up to speed," he said.

In his spare time, Kapler enjoys weightlifting, playing volleyball and ping-pong, and participating in outdoor activities, including fishing, boating and snowboarding.

Weihai has development zones, universities

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"We can work together with those universities," Wen said.

The new location will help with overall business management as well.

"After the move, we will have our own facility with most of the cost under our control," Wen said. "Then we will have a steadier team of employees. It will give us the chance to firm the quality control and implement platform-based management with a more detailed facility."

The new facility will have two factories, one will be 3375 m^2, and the other will be 4500 m^2. It also will include a six-story office building.

Construction is scheduled to begin in late spring or early summer 2018.

As part of Sputtering Components' world-wide sales and service network, Sputtering Components China has been representing Sputtering Components products since 2009. It currently has 10 employees.

Vincent Wen