

FACTS



THINK GLOBAL ACT LOCAL!

**HIGH-TECH HARDWARE
WITH SOFT SKILLS COMBINED**

SKIF-M: HiPIMS PREMIERE IN RUSSIA
FOR WORLDWIDE AVIATION

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**EXPANDED USA HEADQUARTERS
STRENGTHENS ITS GLOBAL POSITION**

CAPACITIES INCREASED FOR
DIAMOND AND HiPIMS PRODUCTION

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THINK GLOBAL, ACT LOCAL!

Some people are asking what will replace internal combustion engines in cars and looking for new business opportunities in the machining sector, while others are looking for ways to reliably scale up their booming business. Scenarios of a globalized world with highly localized requirements. If you want to be part of the global action, you need local presence.

At CemeCon we are investing in our worldwide customer service and our technology. Our internationally active service team is expanding rapidly in the USA, in China, in Japan and in Germany, and our established HiPIMS technology becomes global in the cutting tool world.

INVEST IN A SOUND FUTURE – #FUTUREPROOF!

Yours sincerely,



Dr. Toni Leyendecker



Dr. Oliver Lemmer



Bernd Hermeler



Executive board of CemeCon AG (from left):
Dr. Oliver Lemmer, Dr. Toni Leyendecker and Bernd Hermeler.

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CemeCon offers premium service worldwide.

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CEMECON CHARTS THE FUTURE

Global market conditions demand more and more custom solutions – excellent responsiveness, high speed, great flexibility and sustainability are indispensable for survival in the international arena. CemeCon is utilizing growth opportunities and equipping itself for the tasks ahead. The Supervisory board of CemeCon AG has unanimously appointed Bernd Hermeler to the executive board, where he joins Dr. Toni Leyendecker and Dr. Oliver Lemmer. He assumed responsibility for the Sales and Marketing business areas in January 2018. FACTS spoke with the members of the executive board.

Why Bernd Hermeler?

TONI LEYENDECKER: Bernd Hermeler has held various management positions at CemeCon since 1989. He has spent time in all departments and understands the company, the products and the technologies first-hand. His extensive knowledge of the global market, his international experience in direct contact with customers, his participation in strategy development and his many years of practical experience in employee management make him the ideal person for the tasks ahead.

What are those tasks?

BERND HERMELER: We want to boost our international presence. Our goal is to increase the availability of our premium products worldwide. For that purpose we will focus more on the specific aspects of individual markets. In Asia, for example, we have now set up a service hub to improve local customer support. We are further increasing availability of our products and services around the world, while of course maintaining the high quality. We are also increasing the density

of our worldwide logistics network. Even closer to the customer, even more tailored to customer requirements – that is the main theme.

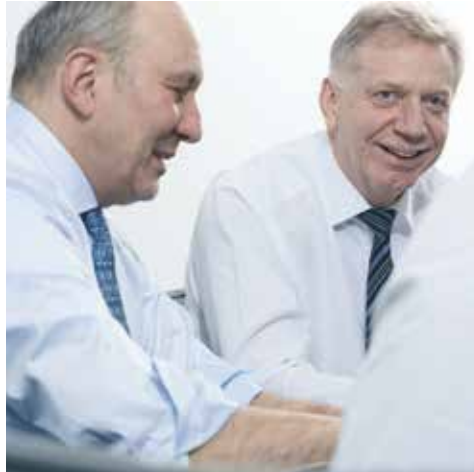
How is the market evolving?

OLIVER LEMMER: The change from internal combustion engines to alternative drive systems creates challenges for tool manufacturers. High-performance materials are relatively difficult to machine. They require precision and need production tools with tighter and tighter tolerances. The batch sizes are also



"Our **COATINGS** and **PLANTS** are first-class and our technology is **EXTREMELY FLEXIBLE** – ideal for meeting **FUTURE CHALLENGES** in the world of cutting tools."

Bernd Hermeler, new CMO of CemeCon



In January, Bernd Hermeler (left) joined Dr. Oliver Lemmer (center left) and Dr. Toni Leyendecker (center right) on the executive board.

changing. Smaller and smaller, more customized and more tailored – and they have to be available faster all the time. That enormously increases complexity in production.

What does that mean for manufacturers?

BERND HERMELER: Anyone who does not flexibly tailor their tools to the market is quickly left behind.

Our Premium coatings provide unique selling propositions thanks to custom coating development. Our technologies are flexible and open to the ideas of our customers – ideal for meeting future challenges.

How is CemeCon responding to the market challenges?

TONI LEYENDECKER: We are moving away from Premium coatings and

heading towards custom tailored Premium Plus solutions. Responsiveness, speed, flexibility and sustainability – all traits of CemeCon – are crucial not only in the growth markets but also in machine building and car production, and especially in aerospace, medical technology and electronics. If you have innovation in your DNA today, you will be a winner in tomorrow's markets.

As everywhere, digitalization is making rapid strides at CemeCon. The Coating app is one example. It facilitates quick and easy recommendations for the right coating material – 50 percent of the Premium coating process. The other 50 percent depends on the requirements. Customers can also choose from Premium or Premium Plus service. Premium service focuses on the specific form and function of the tool. This leads to the best possible Premium coating based on best practice. The domain of Premium Plus service is new geometries, innovative tool concepts and special applications. There CemeCon works closely with the customer to design a coating solution precisely tailored to the market requirements.

The CemeCon Coating app is available at coatings.cemecon.de.

"The **PEOPLE** behind our service are what make the difference. The **MEMBERS OF OUR WORLDWIDE SALES TEAM** are the specialists who make our **PREMIUM** and **PREMIUM PLUS** service so effective."

Dr. Beate Hüttermann, new Head of Sales at CemeCon



CC800® HiPIMS OPENS UP NEW MARKETS FOR PREMIUM TOOLS

THE DECISIVE ADVANTAGE

Flexibility, the highest quality and short delivery times – with customized tool solutions and small batches: an in-house coating line brings a lot of advantages. This is why Kanne Premiumwerkzeuge has been relying on coating technology from CemeCon since 2007. Now the company is taking its coating expertise to the next level with the latest generation HiPIMS system from CemeCon.



Kanne Premiumwerkzeuge, experts in precision tools, can equip a complete production line from a single source. "Complex high-performance tools, even tools from series manufacturers, which we regrind and coat, demonstrate consistently

high performance over their entire service life, not least because of our coating line for sputter coatings from CemeCon. With the CC800® HiPIMS, we now want to provide metal cutting companies with tools that are even more efficient," says

Dipl.-Ing. Volkmar Kanne, CEO of Kanne Premiumwerkzeuge.

HiPIMS technology, with its wide range of variants, precision and cost-effectiveness, is clearly superior to other methods. It enables

KANNE PREMIUMWERKZEUGE



Kanne Premiumwerkzeuge has been a specialist in machining tools and tool services since 1978. The company currently employs approximately 50 people and produces, sells, sharpens, and coats premium tools for the most demanding specifications. Tools are produced with extreme precision and minimal tolerances at two locations, Northeim and Aschersleben. The strength is in the delivery of special solutions tailored to the customer. To meet the requirements, Kanne Premiumwerkzeuge relies on continuous development and qualification of its employees, as well as investments in innovative plant technology.

www.kanne-werkzeuge.de

faster and more accurate development of new coating materials. The exceptionally hard, tough, adherent and smooth layers are deposited in narrow tolerances. In addition, the fully-automatic and low-maintenance CC800® HiPIMS is able to change coating batches quickly and easily. And it coats with a deposition rate of up to 2 µm per hour.

REACHING NEW TARGET GROUPS

Dipl.-Ing. Volkmar Kanne: "Thanks to our close cooperation with CemeCon, we always have access to the latest CemeCon coating materials and we can jointly develop coatings for specific applications. With the investment in the CC800® HiPIMS, we are strengthening this successful and long-standing cooperation, and we want to establish CemeCon's coating materials for reground tools in our contractual coating services."

In addition to the existing customers from the machining industry, more and more demanding tool service providers and end customers with their own in-house tool grinding workshop are increasingly



Kanne Premiumwerkzeuge offers the complete production chain from a single source – for everything from regrinding to coating.

becoming the focus. Kanne offers the speed and flexibility that are required here. Furthermore, the Northeim company scores with its extended service. Cutting edge preparation, post-treatment, finishing and polishing.

Dipl.-Ing. Volkmar Kanne: "We specialize in a tool mix from a wide

variety of customers. This is why our range focuses on regrinding operations. We provide them with the high-performance CemeCon coatings of the HiPIMS generation, which is opening up a new market for us!"

"With the investment in the **CC800® HiPIMS**, we are strengthening the successful and long-standing **COOPERATION** with CemeCon. This technology is opening up **NEW TARGET GROUPS** for us."

Dipl.-Ing. Volkmar Kanne, CEO of Kanne Premiumwerkzeuge



HIGH-TECH HARDWARE WITH SOFT SKILLS COMBINED

The aerospace industry paves the way for new materials and material combinations. After all, airplanes must be made lighter and more resource-efficient, and it is only innovative tool systems that can help with cost-effective processing. An expert in this sector in Russia is SKIF-M Ltd., which now designs its own CC800® HiPIMS-optimized coating solutions for its cutting inserts.

"In particular, the new coating materials AluCon® and InoxaCon® were the criteria we used to shortlist CemeCon as a supplier for our coating line. Coating properties such as hardness, smoothness and tool service life extremes convinced us very quickly that they will greatly en-

hance our inserts for milling tools," says Dr. Alexander Moskvitin, CEO of SKIF-M Ltd., based in Belgorod, an internationally established Russian tool manufacturer in the aviation industry. It focuses on the production of complex insert milling systems for typical aviation materials, with

titanium, nickel-based materials and aluminum alloys, none of which are lightweights when it comes to machining.

CUTTING INSERTS SPECIALISTS AMONG THEMSELVES

In order to be a competent and reliable partner to the suppliers of the aircraft industry, continuous optimization of existing machining solutions are high on the list of requirements expected of tool manufacturers. "Our many years of experience in this industry have shown us that coatings have a significant impact on tool performance. In addition to future-focused technology, in our search for a supplier of coating systems, support was



Dr. Alexander Moskvitin, CEO of SKIF-M Ltd. (right), with Anton Gubanov, Manager of Coating Technology, is convinced that HiPIMS puts SKIF-M in a top position.



SKIF-M now coats its cutting inserts with high-performance HiPIMS coating layers, such as FerroCon®.

Eric Knipprath, production expert in cutting inserts for CemeCon (middle), trains the SKIF-M team in Belgorod.

crucial to us – before and especially after the purchase of the system," says Dr. Alexander Moskvitin. "The CemeCon technicians gave us very precise instructions and advice, and they are highly competent in Russian," adds Anton Gubanov, Manager of Coating Technology at SKIF-M.

Traditionally equipped in the coating center in Würselen with its own coating line for cutting inserts, CemeCon put all the necessary expertise for this type of tool in the balance. "In addition, we focus on service very intensively because, from our point of view, it is only through the right training, on-site,

that the entire system consisting of tool manufacturing and material-related coating can succeed in the best way possible," says Ilya Mozgov of AO Rosmark-Steel, CemeCon partner in Russia.

INVESTED IN THE FUTURE

AluCon®, the new TiB₂-based HiPIMS coating material, makes it possible to process aviation materials, such as TiAl6V4 and aluminum alloys without built-up edges. "Our international customers make the best aircrafts and demand the best tools. As a unique selling point, AluCon® puts us in the top position," says a delighted Dr. Moskvitin.

With the HiPIMS system, SKIF-M now has a wide range of options for coordinating its high-performance cutting tools. The Russian company also benefits from CemeCon technology for its second large market – cutting inserts for heavy duty machining of train wheels and chassis. "In this segment, 'thick layers' with 6 and even 9 µm of coating thickness are a real competitive advantage for our milling inserts! In general, we expect many more successful tool generations and satisfied customers from the HiPIMS system. After all, with CemeCon we have the ideal support in all coating situations," summarizes Dr. Alexander Moskvitin.

SKIF-M LTD.



SKIF-M Ltd. was founded in 1993 in Belgorod, Russia, from a scientific laboratory and a milling tool manufacturing plant. All tools, primarily cutting inserts for the machining of titanium and other aviation materials, and for steels, are developed in our own design office, where we can count on more than twenty years of experience. State-of-the-art production methods enable

series production with short lead times and special designs for export to Germany and the USA. In the standard program, SKIF-M covers diameters from 6 mm to 1000 mm. 70 percent of the SKIF-M tools are specifically developed for machining aerospace materials and the others are designed for heavy duty machining in rail transport.

www.skif-m.net

CAPACITIES INCREASED FOR DIAMOND AND HiPIMS PRODUCTION

EXPANDED USA HEADQUARTERS STRENGTHENS ITS GLOBAL POSITION

On January 17th, CemeCon, Inc. celebrated the grand opening of its new North American headquarters. It includes a production hall with additional surface area of 1,500 m² for the increase in capacity for diamond production. This supports CemeCon, Inc.'s position as an innovation and market leader in diamond coatings in the USA and also sends a clear signal internationally. CemeCon, Inc. looks forward to the future.

After the foundation of CemeCon, Inc. in 1998, growth industries, such as oil and gas production, the automotive industry and aerospace quickly became aware of the premium quality available from Horseheads, New York. This led to the decision by the CemeCon AG subsidiary to expand

its sales and service in 2004 for the sputtering systems with the PVD coating service, and to move to the IST Center in Big Flats, New York. Two production capacity expansions over the subsequent ten years demonstrate the skyrocketing demand for CemeCon coatings in the USA.

"Since September 2014, we have also been using the world-leading diamond technology from CemeCon to coat cutting tools for our extremely demanding customers. The USA is a technology leader in aircraft manufacturing and therefore also in the processing of lightweight

Grand opening of the new CemeCon, Inc. headquarters, with the ceremonial ribbon cutting (from left): Gary Lake, President of CemeCon, Inc., Marjorie Steed, CemeCon V.P., Dr.-Ing. Toni Leyendecker, CEO of CemeCon AG, Mike Krusen, CEO of STEG, Tom Santulli, Chemung County Executive, and Edward Fairbrother, Big Flats Supervisor.



construction materials, such as fiber-reinforced plastic materials and non-ferrous metals that are difficult to machine. The quality requirements are very high here – and we fulfill them. So it quickly became clear that we needed to expand our production once again to meet the demand," says Gary Lake, President of CemeCon, Inc.

The entire diamond production line was moved over to the new complex. This makes room for further HiPIMS capacities, which tool manufacturers are quite impatiently waiting for. After 20 years of growth, CemeCon, Inc. now has a total production area of approximately 3,700 m² and employs 50 people.

"With this fourth expansion in our company history, we will further solidify our position as a leader in the diamond coating industry," continues Lake. "In addition, we now have the room and the ability to expand production with our new HiPIMS coating technology. We are fully prepared to respond to the demands from the marketplace for increased capacity, quick turnaround, and high-quality products."

"The USA is a **TECHNOLOGY LEADER** in **AIRCRAFT MANUFACTURING** and therefore also in the processing of lightweight construction materials. The **QUALITY REQUIREMENTS** are very high here – and we fulfill them."

Gary Lake, President of CemeCon, Inc.



HiPIMS and diamond contract coating, with support for technology customers in Horseheads united under one roof. CemeCon is expanding its capacities to better serve customers around the world and to expand its service.



Toni Leyendecker, CEO of CemeCon AG says, "CemeCon is growing and is gradually expanding its international presence. This expansion of capacities in the USA is sending out important signals. With the con-

struction of our second production site for diamond coating, in addition to our coating center in Würselen, we are further increasing and ensuring worldwide availability of our CCDia® coatings."



HiPIMS BRINGS THE ADVANTAGE

The Chinese market is growing, including industries such as the car production and the 3C (computer, communication, consumer electronics) industry. Efficient tools are essential for processing complex and small components. With HiPIMS coatings, manufacturers can give their tools the decisive competitive edge. In order to show the advantages of the technology and demonstrate the possibilities, CemeCon launched a live batch in China.

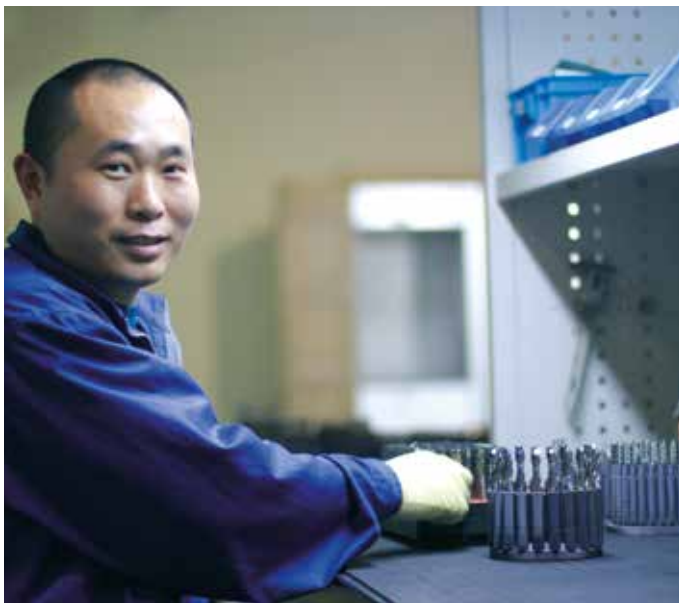
CemeCon in China is continuously expanding its capacities for the growing Chinese market. Since late 2016, the coating center in Suzhou has been using HiPIMS technology on the 3,000 m² production floor to provide demanding customers from Asia with high-quality coatings for their tools. Numerous success stories with FerroCon[®],

InoxaCon[®] and AluCon[®] in China testify to the advantages of the future-oriented HiPIMS technology.

PERFECT FOR THE CHINESE MARKET

In particular, the high flexibility coupled with the maximum productivity through very high

deposition rates of 2 µm/h makes the technology so attractive for Chinese tool manufacturers. "Our systems are open to our customer's ideas. They can develop their own coating recipe with HiPIMS in an almost unlimited variety of material. The heart of all coating lines is the coating unit. All of the components included in the unit can be selected.



Since late 2016, coating work has been carried out with HiPIMS systems in the Suzhou coating center: ZhouYa (left), Shift Supervisor at CemeCon in China, and YuanHui (right), Production Manager in China.

And the target concept is open for your future coating materials" says Jimmy Zhang, Sales Manager at CemeCon China.



For micro tools, which are currently used in the manufacture of mobile phone housings and the production of consumer electronics, HiPIMS technology leads the way. The result are smooth coatings and excellent cutting edges. In addition, complex geometries can be coated with virtually the same coating thickness. The extremely good adhesion makes HiPIMS coatings perfect.



"At the live batch, we presented the advantages of HiPIMS technology to a total of 20 tool experts. The tools coated on-site with FerroCon® gave a great impression with their extremely smooth and hard surfaces," says Yuan Werner-Guo, Sales Expert for the Chinese market at CemeCon.

Jimmy Zhang (Sales Manager at CemeCon China, upper) introduces the possibilities of HiPIMS technology to multiple tool makers at the live batch at the Suzhou coating center.



Are you interested?

Set up an appointment to learn more about the HiPIMS technology live and on-site in the USA, China or Germany.

Talk to an expert:



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Jimmy Zhang

+49 170 6310 724
Yuan Werner-Guo



+1 607 562 2363
Majorie Steed



+49 2405 44 70 122
Dr. Christoph Schiffers



SERVICE MAKES THE DIFFERENCE

Future markets for cutting tools include medical technology, consumer electronics and aerospace engineering. Materials that are difficult to machine are commonplace in those areas. CemeCon technologies, whether HiPIMS or diamond, deliver the outstanding quality that manufacturers need for their tools in order to prevail in the market. Customers who opt for a turnkey coating line receive a comprehensive service package – worldwide.



For tool manufacturers, coating service provider and researchers, CemeCon provides individual advice and coating lines tailored to their needs. "We also offer combined expertise: mechanical engineering, coating development and one of the largest coating centers for cutting tools are all in one place at Würselen. We develop and build all our machines ourselves. We also carry out coating service on a daily basis, and we see the results in practice. That benefits both us and our customers," says Andreas Jürgens, Head of Technology Transfer at CemeCon.

CemeCon has already integrated over 350 plants into customer production lines worldwide and supports technology customers around the world every day. The Service Team is available 24/7 via hotline, remote service or in person. Is your production in another part of the world? Expert service technicians are available in the USA, China and Japan. CemeCon also maintains local stocks of spare parts for fast response when necessary.

Language barriers? In Würselen alone our employees speak a total of 19 languages, not to mention our international offices and partners.

The CemeCon Service Team supports system customers worldwide – for example in India, China, Germany or the USA (from top left to bottom right).





FOR FUTURE CHALLENGES

CCDIA[®]HISPEED: ALL THE BEST COMBINED

Heat dissipation, oxidation resistance, stability, running in behavior, conductivity – the combination of the two leading CemeCon technologies – HiPIMS and diamond – enables an entire new class of coating materials. CCDia[®]HiSpeed is more than the sum of excellent properties and opens new horizons in machining.

Precision tools coated with CCDia[®]HiSpeed are extremely high-performance, very heat-resistant and the edges are extremely hard. But why?

Ultra-hard diamond offers the best possible foundation for HiPIMS. The edge remains stable during machining and the "eggshell effect" is prevented. Current processing strategies lead to extreme temperatures on the cutting edge. Thanks to the isolating properties of HiPIMS, the heat is transferred into the chips. This reduces crater wear and protects the diamond from thermal damage. CCDia[®]HiSpeed bypasses the low temperature resistance of carbon while taking advantage of the extreme hardness of diamond. The residual heat distributes the diamond evenly due to the good thermal conductivity in the substrate, thereby protecting the cobalt matrix of the carbide metal from softening.

Thanks to the "softer" surface compared to diamond, the tools have a better running-in into the material

and, at the same time, benefit from the hardness of the diamond – a guarantee for high productivity. For example, the electroconductive surface of CCDia[®]HiSpeed facilitates automatic approaching in graphite or PCB processing. The shiny look fits in perfectly with the premium properties. With its distinctive colors, the CCDia[®]HiSpeed achieves a higher recognition effect.

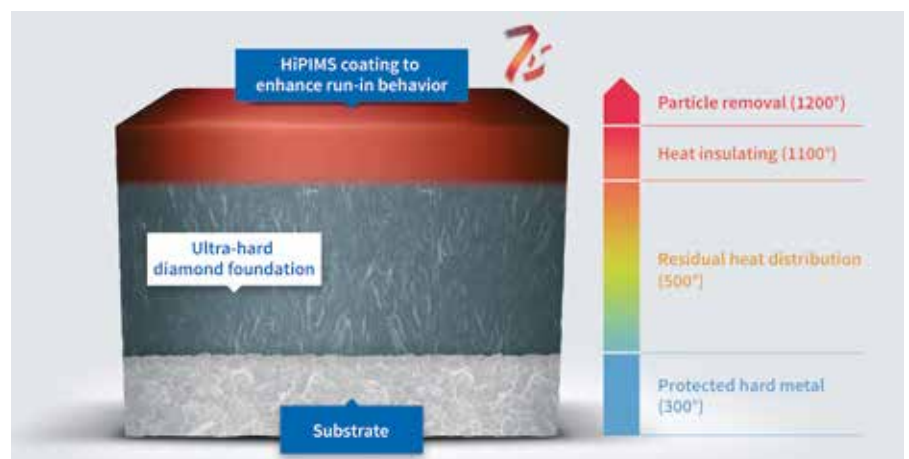
"With 'HiPIMS meets diamond', we have created a unique coating

material concept. Multiple applications are conceivable – for example, casting, PCB processing, machining of stacks or graphite or processing of materials that we haven't even thought of yet. We want to test and make these possibilities reality with our customers," says Toni Leyendecker, CEO of CemeCon AG.

You are looking for ...?

Our Coating Service experts are here to help:

Phone: +49 2405 44 70123



CCDia[®]HiSpeed is more than the combination of HiPIMS and diamond.



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OUR NEXT EVENTS 2018

14TH - 17TH MARCH 2018
GrindTec
Augsburg (Germany)

03RD - 07TH APRIL 2018
Simtos
Seoul (Korea)

23RD - 27TH APRIL 2018
ICMCTF
San Diego (USA)

03RD - 05TH MAY 2018
ECTA Conferenz
Stresa (Italy)

14TH - 18TH MAY 2018
Metallobrabotka
Moskau (Russia)

25TH - 28TH JUNE 2018
HiPIMS Conference
Sheffield (Great Britain)

10TH - 15TH SEPTEMBER 2018
IMTS
Chicago (USA)

18TH - 22TH SEPTEMBER 2018
AMB
Stuttgart (Germany)

01ST - 06TH NOVEMBER 2018
JIMTOF
Tokio (Japan)