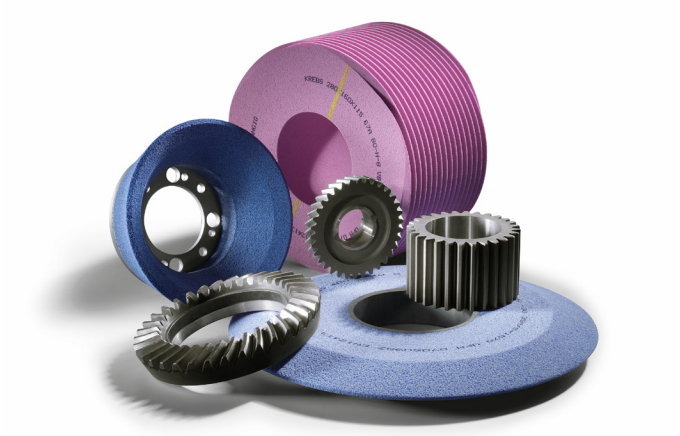
Krebs & Riedel

CELEBRATE 125 YEARS OF GRINDING TECHNOLOGY

The cornerstone of the Krebs & Riedel grinding wheel factory in Bad Karlshafen was laid some 125 years ago. Today the family-owned company operates worldwide as a manufacturer of individually manufactured precision grinding wheels and impresses with innovation and solution-oriented application technology advice. Above all, customers from the automotive, aerospace, mechanical engineering, medical technology and wind power sectors rely upon the high-precision products manufactured by Krebs & Riedel. In addition to conventional grinding wheels, cutting wheels, cup grinding wheels and grinding segments with ceramic and synthetic resin bonds, Krebs & Riedel also manufactures CBN and diamond tools with ceramic bonds, as well as honing rings. The medium-sized family business with over 250 committed employees has an annual turnover of 31 million euros.



Solutions for profile grinding, continuous generating grinding applications.

Krebs & Riedel has subsidiaries in China and India, as well as 30 international distributors. A team of application technology consultants looks after customers worldwide. Krebs & Riedel emphasis the importance of research and development and works closely with several research institutions. Important investments in sustainability management and the expansion of the Bad Karlshafen plant are ongoing.

At Krebs & Riedel, high-quality products are created with special quality standards and maximum safety. Krebs & Riedel is a member of the VDS (Verband Deutscher Schleifmittelwerke e.V.). As a founding member of the oSa (organization for the safety of abrasives), safety comes first.

The production program includes corundum and silicon carbide wheels with a ceramic bond and synthetic resin bond for most industrial grinding applications up to 900 mm outside diameter for round, flat, tool, centerless, gear and rough grinding applications. Cut-off wheels in synthetic resin bond with and without fiber reinforcement up to 800 mm outside diameter for chop cut, pendulum cutting and rotary cutting. Roughing and pendulum grinding with and without fibre reinforcement for the cleaning shop and the foundry industry; Grinding wheels for pendulum grinding machines, grinding wheels for bench grinders and grinding wheels for grinding manipulators. Diamond and CBN grinding media in vitrified bond with a working speed of up to 200 m/s for internal, flat, circular, tool grinding and special grinding processes.

Krebs & Riedel is a specialist in the field of gear applications and supplies top gear manufacturers around the globe. These grinding wheels are used on many gear grinding machines, including those from the manufacturers Gleason, Kapp-Niles, Klingelnberg, Liebherr, Mitsubishi, Reishauer and Samputensili.

For customers in the automotive industry, aerospace, mechanical engineering, medical technology and wind power, Krebs & Riedel offers the right tools for the machining of gears in continuously reliable quality. The company's experience ranges from grinding the smallest gears in the field of medical technology to large planetary gears in wind turbines.

Products include:

Blue Moon 147A and 148A - specifications for increased economic efficiency through extended dressing cycles and increased removal rates in the grinding process. By using special abrasive grain geometries and proportions in connection

Continuous generating grinding with fine and polishing zone. Picture copyright: Kapp-Niles.

with an optimized pore space design, a very high level of ease of cutting with little heat input and high cutting performance is achieved. Krebs & Riedel produces unprofiled or pre-profiled worm wheels for modules 1 - 12 in the highest quality according to customer specifications up to 80 m/s.

Krebs & Riedel produces a wide range of dressable grinding worms with a ceramic bond for gear machining. All specifications guarantee the highest profile accuracy with the lowest thermal loads on the workpieces. The combination of grinding worms with fine-grain or polishing worms creates powerful tools that enable grinding and polishing in one application.

Krebs & Riedel was also one of the manufacturers who offered a carrier variant for CBN and diamond abrasives. The proportion of carbon fiber guarantees maximum strength with the lowest weight. The body is up to 75% lighter than a comparable steel body. In addition to easy handling during assembly, extremely smooth running is achieved. This means that the load on the grinding spindle is lower. They also offer significantly better damping properties than conventional base bodies. In addition, the carbon base bodies are often used when machining small filigree components. The grinding behavior is more harmonious and leads to improved surface quality. With the new CBN worm grinding wheels, an increase in productivity can be achieved through increased stock removal with an improved service life. Thanks to the fact that the base body can be re-assigned, good economic efficiency is also achieved, despite the higher material price. Therefore, it is not just a short-term thought, but a trend that will also prevail over the long term. The working speeds are up to 100 m/s. Depending on the composition, higher working speeds can also be achieved.

www.krebs-riedel.de

Martin Kapp

ANNOUNCES RETIREMENT

After many years of success at machine tool manufacturer Kapp Niles, Martin Kapp is retiring from the joint management of the company with Helmut Nüssle. His sons Michael and Matthias Kapp will continue the family tradition as of 01.07.2021 and strengthen the new management together with Michael Bär.

The motivation for strengthening the management, combined with a reorganization of the areas of responsibility, was not only the retirement of Martin Kapp but also the increasing importance of global markets. "We have decided to broaden and strengthen the management team. This will allow us to focus more on operational topics and intensify our global orientation, especially towards China," says Martin Kapp.

In the future, Helmut Nüssle will be responsible for China, the most important single market in the group, the coordination and development of the international offices, and strategic issues. Michael Kapp will cover the value-creating areas, Matthias Kapp the development and sales and Michael Bär the

commercial part. Martin Kapp will join the advisory board at this time and take over as chairman.

After studying mechanical engineering, the two brothers Michael and Matthias Kapp first worked for other companies and have now been with Kapp Niles for several years. Michael Kapp was previously responsible for production, Matthias Kapp was previously in charge of marketing. The grandsons of company founder Bernhard Kapp would like to maintain and expand the current business areas and increasingly focus on new business areas such as digitalization and e-mobility.

(Left to right) **Helmut Nüssle, Martin Kapp, Michael Kapp, Michael Bär and Matthias Kapp.**

Michael Bär brings his years of experience in the commercial sector to the management team. The graduate in business administration has been with the group since January 2012, most recently as division manager for controlling, finance and human resources.

Even with the new management, Kapp Niles remains true to itself: the family-run company has always maintained open communication with its employees and attaches highest importance to stability, independence, and security for the future.

www.kapp-niles.com

QuesTek

AWARDED THREE PROJECTS FOR ADVANCED MATERIALS DEVELOPMENT

QuesTek Innovations LLC has received three new Small Business Innovation Research (SBIR) Phase I Awards from The Office of Naval Research, NASA and The Department of Energy to develop advanced materials and technologies across a diverse range of materials systems, industries and demanding end-use applications.

Office of Naval Research SBIR-funded SBIR: QuesTek will develop a software tool leveraging an integrated computational materials engineering (ICME)-based modeling framework to enable optimization of a nickel alloy for Additive Manufacturing (AM). The software tool will enable alloy composition customization for conditions observed in AM, enhancing printability, reducing flaws, and improving mechanical properties of AM Ni components. The software's mechanistic computational models will be calibrated using state-of-the-art experimental techniques to validate predictive models, explaining complex phenomena resulting from AM processing. The developed software tool is expected to improve the understanding of AM technology and harness it to design a new generation of advanced Ni alloys and components for jet engines, industrial gas turbines, and other demanding applications.

NASA-funded SBIR: QuesTek will computationally design calcia-magnesia-alumina-silicate-(CMAS) resistant multi-layer thermal and environmental barrier coatings for ceramic matrix composite (CMC)-based hot turbine components. While CMCs allow for greater operating temperatures and fuel efficiency compared to state-of-the-art Ni superalloys, they are not readily used because current coatings lack long-term protection against molten CMAS attack at high temperature. QuesTek's new ICME-designed coating system will enable increased reliability and performance of CMCs in aircraft propulsion systems, hypersonic combustor panels, commercial turbo fans and industrial gas turbine plants leading to greater fuel efficiency.

Department of Energy-funded SBIR: QuesTek will apply its ICME tools to develop a machine learning (ML)-based, open-source software package enabling reproducible data analysis for multiple electron microscopy systems and data types. This effort specifically addresses the lack of current open-source packages tailored for metallic materials data. The proposed CALPHAD-based thermodynamics and kinetics modeling framework for ML models will increase the accuracy for phase identification across all alloy systems of interest. Such a tool will enable the effective analysis of the large and quickly growing pool of electron microscopy data generated at research facilities, universities and companies.

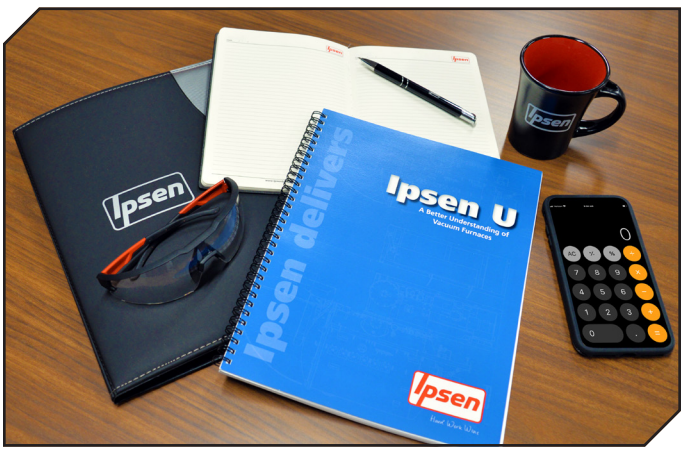
Dr. Greg Olson, QuesTek co-founder and chief science officer, and the Massachusetts Institute of Technology Thermo-Calc Professor of the Practice, stated "These three projects represent diverse examples of using ICME for concurrent design of material and component, enabling accelerated development of advanced materials across a wide range of material systems and applications."

www.questek.com

Ipsen

BRINGS EDUCATION DIRECTLY TO CUSTOMERS

In addition to classroom-style trainings at their manufacturing facility, Ipsen offers on-site Ipsen U courses to accommodate large groups at customer facilities. Ipsen U is a course designed to teach heat treatment fundamentals, best practices and new methods. Attendees receive an extensive overview of vacuum furnace equipment, processes and maintenance.



For on-site trainings, customers can choose which topics to focus on, allowing for a customized, hands-on experience that follows safety protocols. Ipsen sends highly qualified technical resources, sometimes those who were directly involved with the build of the furnace they are training on.

The next Ipsen U class is scheduled for August 3–5, 2021, in Cherry Valley, Illinois. Attendees for the 3-day course have the advantage of networking with other heat treaters and seeing how furnaces are built at Ipsen's Vacuum Technology Excellence Center.

www.ipsenusa.com/IpsenU

MSC Software

ANNOUNCES WIND POWER AND SUSTAINABILITY WEBINAR SERIES

MSC Software, a part of Hexagon's Manufacturing Intelligence division, announced it will host an eight-part webinar series covering industry-shaping technology trends for the wind power industry. The Technology Tailwinds series is designed to inform and update design and CAE engineers, quality inspection professionals, and factory managers involved in wind turbine design, manufacturing, operations, and MRO. The upcoming Hexagon series will focus on trending topics in the wind power industry such as the evolution toward large capacity turbines that will require advances in design, analytics, automation, inspection and maintenance. On a monthly basis, MSC Software will present fresh insights to help navigate the current business windscape through the use of touch point technologies

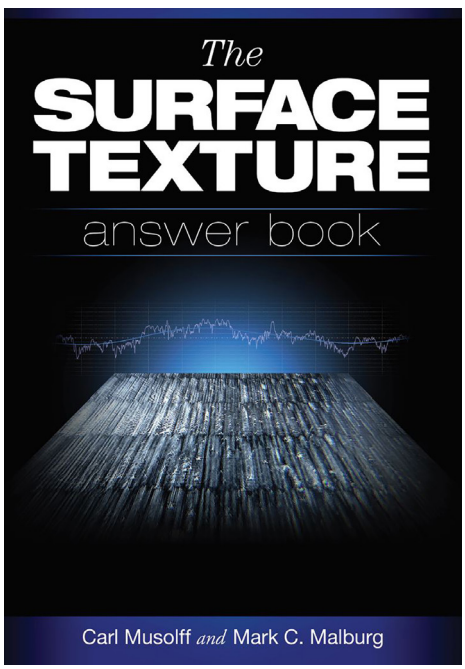
and implementation strategies. Discussions will cover the key technology components and the best practices required to advance this unfolding next-generation of wind turbines systems, and ultimately accelerate clean energy adoption.

www.mscsoftware.com/Wind-Energy-Webinar-Series

Surface Texture Answer Book

EXAMINES CONCEPTS AND APPLICATIONS

A new resource makes it easier to find answers to surface texture related concepts and applications. The Surface Texture Answer Book answers more than 100 commonly-asked questions regarding surface texture measurement, analysis, interpretation, specification, and application.



"Surface texture is more than just a number from a measurement device," said Carl Musolff, co-author. "It's a microscopic world with huge implications for many industries and applications. Our goal with this book is to help technicians and engineers quickly address their questions, regardless of their level of experience with surface analysis. But more than that, we want this book to be a learning resource that will benefit readers far

beyond their immediate need."

"Every day in my work I answer questions like, 'What is filtering?' and 'What is waviness?' said Mark Malburg, co-author and president of Digital Metrology Solutions. "These are important questions about measuring and specifying surfaces, most of which are not taught in schools. We found there was a real need for a resource to directly address these kinds of questions in a user-friendly, non-academic way. This book includes hundreds of figures to help make texture visual, which we've found is the best way to help readers grasp and retain these concepts."

The Surface Texture Answer Book draws on information from numerous resources, as well as the authors' combined 70 years of industry experience. Topics focus primarily on two-dimensional measurement techniques, which represent the vast majority of surface texture measurements in industry today. The book also touches on some important aspects of 3-dimensional (areal) measurement, which is becoming more prevalent in development and industrial applications.

"We believe that this book clarifies a lot of the concepts, and misconceptions, relating to surface texture," said Musolff. "We hope readers will be able to come to the book for a particular answer, then encounter other topics along the way that expand their knowledge as well."

The 400-page paperback book is available through *amazon.com* (*amazon.com/Surface-Texture-Answer-Book/dp/1736846825/*) and through the *digitalmetrology.com* website.

Digitalmetrology.com

Star SU's Engineering Manager

ELECTED BY GEAR RESEARCH INSTITUTE TO ITS BOARD OF TRUSTEES

Star SU has announced that **John O' Neil**, its engineering manager for gear tools, has been elected by the Gear Research Institute (GRI) individual members and member companies to its Board of Trustees for the 2021- 2023 term. The GRI is governed by a tripartite board, which includes membership of the Institute as well as the Society of Mechanical Engineers (ASME) and the American Gear Manufacturer's Association (AGMA).

O'Neil has been a member of the GRI since 2010, as well as being actively involved in the AGMA where he has been a Gear Cutting Tool Committee Member since 2009 and Vice Chair of this committee since 2015. Additionally, he was recently appointed as Star SU's representative to AGMA's Electric Drive Committee.

As engineering manager for gear tool at Star SU, a joint venture between Star Cutter Company and Samputensili, O'Neil has been instrumental in aligning the technical resources and manufacturing practices between the two companies. Originally joining Star Cutter Company in 1980, he has served in a multitude of manufacturing and engineering capacities for the company's gear cutting solutions.

www.star-su.com

Index

EXPANDS DISTRIBUTION NETWORK

Index with its Index and Traub brands of precision turning machines are now represented by Great Lakes Machinery, Inc. (Lancaster, NY) in the Northern New York area. According to Cris Taylor, Index USA president and CEO, the new representation part of the company's ongoing sales and service initiative.

"Our distributor network plays a vital role in providing a high level of responsiveness at a local level," said Taylor. "We are very selective in choosing distributors and Great Lakes Machinery meets the high standards we set for our partners. Their addition to our network will be a significant sales and service asset to Index customers in New York State."

Great Lakes Machinery, Inc. is a family-owned firm with more than 30 years of machine-sales experience.

Us.index-traub.com

Felsomat

HOSTS SUCCESSFUL INNOVATION DAY

On Thursday, June 10 Felsomat USA swung open the doors at their USA headquarters in Schaumburg, IL and welcomed more than 40 guests to their Innovation Day. The team was excited to welcome a variety of customers, media, and suppliers to their first in-person event since the beginning of the coronavirus pandemic.

"We've missed our customers, and it was so exciting to show them all the innovations we've been working on over the last year," says Daniel Maerklin, president and CEO of Felsomat USA. He continued, "while as a company we've worked hard to develop and implement the solutions needed to survive, and even thrive during the pandemic, we've really been missing the personal relationships we've developed with our colleagues, suppliers, and customers — so it was very important to us that we host an event that gets everyone together in person, safely."

Throughout the day, attendees experienced a wide variety of live demonstrations on Felsomat's state-of-the-art automation solutions, exciting presentations from expert team members, and experienced networking opportunities that many of us have been so desperately craving over the course of the last year.

A few of the live demonstrations included a state-of-the-art fully automated robotic laser welding line for rear-differential units (RDU) as well as a power transmission unit (PTU), the Felsomat low-cost flexible robotic load cell BAUSTEIN, a modular robotic loading unit that can be easily configured to the specific custom application, as well as a demonstration of the FHC 80 — Felsomat's high speed hobbing machine. "Our goal was to allow guests to see a wide variety of our automation and production solutions. I think we achieved that, and guests seemed very impressed with the technologies on display," says James Petiprin, strategic account manager.

In addition to the machining demonstrations, Felsomat offered a variety of live presentations that highlighted its expertise across a variety of automation and manufacturing systems. Presentations were given by Strategic Account Managers, James Petiprin and Ryan Berman, as well as Vice President of Sales, Matt Skelton, and covered a range of topics including-mobility stator and rotor assembly, FSC Machine Loading, and end of line packout cells.

If you missed the event, don't worry! The team at Felsomat would be happy to give you an individual shop tour. Visit the website below and contact the team to schedule.

www.felsomatinnovationday.com/

Gleason

JOINS UMATI COMMUNITY

Gleason recently joined the Umati Community to develop a common, inter-company, inter-process, inter-model standard which enables production assets to communicate directly regarding production and process data, building a base for advanced diagnostics and efficiency optimization regarding products and processes, and ultimately, the Smart Factory.

Umati with its unified interface will enable customers to overcome current restrictions, choosing equipment more freely, connecting assets than never experienced before. For manufacturers, integration of third party services like automation, tooling or software apps will become much easier. Step by step, initiatives like Umati can be expanded to the entire mechanical engineering industry, not single parts of the manufacturing machine.

Eventually, all elements of the production chain must connect to really optimize processes, maximize product quality, avoid scrap, and gain the best possible efficiency. This initiative goes hand in hand with Gleason's own Closed Loop automatic correction cycle, supported by in-process inspection in parallel to the actual manufacturing cycle.

www.gleason.com