

1st Edition 2019

Contents

() Info

| 70 Years KARL DEUTSCH! | 1 |
|---|----|
| ECHOGRAPH 1093: Testing of Laser-Welded Drive Components of Electromobility | 3 |
| KD-Check: New PT Agents with Wastewater Certificate | 5 |
| Control 2018 | 6 |
| City Run 2018: Joint Run with Maschinenbau Netzwerk Bergisch Land | 6 |
| On-Site: UT-, MT- and PT-Training in Cuba | 7 |
| Action NDT: Our New Sales Partner in France | 7 |
| KARL DEUTSCH Celebrated the End of the Summer | 8 |
| Zerstörungsfreies Schmunzeln (Nondestructive Smiling): New Edition with Follow-Up | 10 |
| From My Professional Life (by Hans-Jörgen Andersen) | 10 |
| KARL DEUTSCH Extends its Management | 13 |
| New Head of the Applications Lab and New Head of MT-Systems at KARL DEUTSCH | 14 |
| New Employees at KARL DEUTSCH | 15 |
| Trade Fairs and Events | 16 |
| About KARL DEUTSCH | 16 |
| | |

Contact

KARL DEUTSCH Pruef- und Messgeraetebau GmbH + Co KG Otto-Hausmann-Ring 101 42115 Wuppertal · Germany Tel. (+49-202)7192-0 · Fax (+49-202)714932 info@karldeutsch.de www.karldeutsch.de

70 Years KARL DEUTSCH!

In 2019, we celebrate a memorable anniversary: The KARL DEUTSCH company was founded 70 years ago on May 13th. Three generations of the Deutsch family have guided the company during the past seven decades. Ing. Karl Deutsch, born in the city of Wittenberge, near Magdeburg, Germany, in 1900, started his business in Wuppertal.

The LEPTOSKOP coating thickness gauge was the first product – a product line which is still part of the product portfolio today. Soon afterwards, ECHOGRAPH ultrasonic testing equipment and DEUTROFLUX magnetic particle testing systems were added. Until today, these product lines are highly important for the company.

After relocating the business into the newly erected Works 1 at the Otto-Hausmann-Ring 101 in 1967, the product range was continuously extended to include the production of testing systems. Already the investment in Works 1 was jointly made by Karl Deutsch and his son Volker Deutsch, who started working for the company after finishing his doctorate in Mechanical Engineering in 1961.

Already in the early years, many export markets were taken care off. Subsidiaries, e.g. in Italy, Sweden and China, and a large network of sales partners cover the relevant industrial markets until today. The export rate is roughly 50% of the turnover.



ECHOGRAPH wheelset testing in the 1950s with Volker Deutsch (standing)

The growth in the segment of testing systems resulted in the erection of Works 2 at the Otto-Hausmann-Ring 201 in 1978.

The third generation Dr. Wolfram Deutsch started working for the company in 1998. He became Managing Director in 2001 after the retirement of Prof. Volker Deutsch who served the company for 40 years.

To be continued on page 2

KARL DEUTSCH

In 2005, Wolfram Deutsch's brother Olaf Deutsch joined the subsidiary KD-China in Beijing. In the subsequent years, Works 2 was extended three times. Today, the product range also includes systems and chemicals for dye penetrant testing and ultrasonic phased arrays.



DEUTROFLUX testing system for magnetic particle testing already using a swinging magnetic field



Pre-acceptance of a large ECHOGRAPH weld testing system in November 2005 with Olaf Deutsch (second from left), Dr. Wolfram Deutsch (third from left), divisional head Michael Joswig (centre) and Zhang Zhengxin (right, founder of KD-China).

We will celebrate in September! On September 18th, KARL DEUTSCH will open its gates, and guests are cordially invited for an evening event. A series of lectures is planned for September 19th. Even though this event will be mostly in held in German language, international partners, customers and friends are also invited. The programme will be announced in good time before the event. On September 20th, our annual summer party with the entire staff and their families will take place. **WD**



The entire staff of KARL DEUTSCH cordially invites you to the 70th company anniversary in September!



ECHOGRAPH 1093: Testing of Laser-Welded Drive Components of Electromobility

For the quality control during the production of components of the drive chain for electromobility an ultrasonic testing machine of the type ECHOGRAPH 1093 was developed and designed.

The component mainly consists of a ring in which two caps are welded circumferentially. The circular welds connecting the three segments must be designed for all occurring tensile, pressure and shear loads. Therefore, high quality demands are requested for the welds.

A special feature which had to be considered during the development of the semiautomatic testing machine was a minimal immersion depth of the component, in order to avoid undesired flooding of inner cavities. Thus, the subsequent drying necessary to avoid corrosion and diversion of water could be omitted.

3D CAD-drawing of the ECHOGRAPH 1093 UT-mechanics for laser-welded drive components of electromobility was also considered. A light, quiet and ultrasonic sensors are below the compo-

As usual and needed in case of new constructions, in particular the ergonomics



Immersion tank for ultrasonic testing with probes arranged from below

adjustment of the position of the components, and by means of suitable racks and working heights unneeded turning, skewing and lifting operator movements

are avoided.

The component is placed almost upright (slightly tilted) on two drive rollers into the water tank.

Thus, the lower edge of the component is minimally immersed in the coupling medium. The ultrasonic sensors are below the component. Prior to testing, the operator scans the QR-code of each component manually. When test is released, the component is rotated and the weld is inspected circumferentially in one track. An additional position encoder monitors the slippage during the rotation to ensure 100% coverage of the weld.

The test result together with the object number is stored in the test protocol. Further sensors survey loading and removal and the correct sorting within a defined time window.

The basis for the inspection is the VW test specification PV6364 "Ultrasonic testing of welded joints on gear wheels".



After inspection, the ECHOVIEW software generates a strip chart evaluating the re-

corded echo amplitudes with respect to the following criteria:

- Maximum sum of all indications,
- · Maximum of single indications and
- Maximum number of single indications. Rz



After the inspection, the ultrasonic echo amplitudes versus the circumference of the component are presented in a strip chart. The red indications mark the exceeding of the gate thresholds. In each of both test tracks (channel 1 & 2) the monitor gate M1 shows two 0.5 % reference reflectors, one 2 % reference reflector and two notches with different notch depths. An X % reference reflector represents a flaw where X % of the weld is defective. The monitor gates M2 are used for the coupling control of the respective channel.

| Flaw Table: | |
|---|-------------------------|
| Channel 1: | |
| Gate 1: Number of defects | = 5 > 3 * |
| Gate 1: Longest defect | = 9.7° > 7.2° * |
| Gate 1: Total defect length | = 27.9° > 10.8° * |
| Gate 2: Number of defects | = 0 |
| Gate 2: Longest defect | = 0.0° <u><</u> 0.0° |
| Gate 2: Total defect length | = 0.0° <u><</u> 0.0° |
| Channel 2: | |
| Gate 1: Number of defects | = 5 > 3 * |
| Gate 1: Longest defect | = 9.1° > 7.2° * |
| Gate 1: Total defect length | = 29.1° > 10.8° * |
| Gate 2: Number of defects | = 0 |
| Gate 2: Longest defect | $=$ 0.0° \leq 0.0° |
| Gate 2: Total defect length | = 0.0° <u><</u> 0.0° |
| | |

The flaw table comprises the comparison of the detected flaws with respect to the selected thresholds (left column = actual values / right column = limit values). The asterisks behind the respective flaw type mark an exceeding of the threshold values.



www.karldeutsch.de » Products » Ultrasonic Testing Systems » ECHOGRAPH 1170



KD-Check: New PT Agents with Wastewater Certificate

The increasing demands on environmental protection and occupational safety in recent years require continuous development and adaptation of existing products.

In addition to the magnetic particle test agents, the products of the KD-Check line (sample tested according to DIN EN ISO 3452) are constantly further developed and adapted to new directives, legislations and customer requirements.

Due to expert assessment on excellent biodegradability a large number of the penetrants offered by KARL DEUTSCH can be diluted and – after consultation with the local water works – can be disposed directly, thus saving considerable disposal costs.



The new dye penetrant provides a particularly high-contrast crack indication, as shown here with a longitudinal flaw on a ball joint.



Display of longitudinal cracks on a saw blade with KD-Check RDP-2

In addition to the high environmental compatibility, the new products KD-Check RDP-2, a red dual-mode dye penetrant with sensitivity class 2 according to DIN EN ISO 3452-2, and KD-Check FWP-6, a fluorescent penetrant, also with sensitivity class 2, are characterized by a very good performance and ease of use.

The good precleaning performance is complemented by a high contrast for optimum crack detection.

The likewise improved dripping behavior reduces carry-over of the test liquid to a minimum, which leads to a reduction in operating costs. If you are interested in the advantages of the two new test agents, we will send you free samples on request.

For technical questions, our technical team would be pleased to assist you: chemicals@karldeutsch.de. **Rb/Gz**



www.karldeutsch.de » Products » Penetrant Testing » Testing Agents for Dye Penetrant Testing » KD-Check

Control 2018

With 883 exhibitors from 31 countries, the Control fair - according to their own statement - remains the world's leading trade fair for quality assurance. From April 24th to 27th, the trade fair exhibited quality assurance at the highest level in Stuttgart. This was appreciated by 28,241 registered trade fair visitors from 98 nations.

As in previous years, KARL DEUTSCH was represented with a booth in Hall 6. Various portable devices were presented, including the ECHOGRAPH 1095 ultrasonic flaw detector, the MANTIS – a portable phased array instrument and the ECHOMETER 1076 and 1077 wall thickness gauges.

For the first time, the products of the company ScanMaster for spot weld inspection



Group picture at the KARL DEUTSCH booth (f.l.t.r): Reinhold Engels, Dr. Wolfram Deutsch, David Gal, Stefan Kierspel, Istvan Bonifert, Tal Afek

were presented. Chief Executive Officer David Gal and Product Manager Tal Afek supported the KARL DEUTSCH team at the booth and left with many positive impressions from the show. The response of the trade fair visitors was excellent, so KARL DEUTSCH will be back at this year's 33rd Control. **Hs**

City Run 2018: Joint Run with Maschinenbau Netzwerk Bergisch Land

On the first weekend of July, time came up again: Tormented by the midsummer heat thousands of runners struggled their way through the Wupper valley between the locations Friedrich Engels Museum and Wuppertal Theatre Hall.

Together with Maschinenbau Netzwerk Bergisch Land (local network of mechanical engineering companies and the University of Wuppertal), KARL DEUTSCH once again provided a tent near the track that served as a contact point for a total of approximately 120 runners.

With 25 runners, KARL DEUTSCH made up the second largest contingent of the five companies involved, and thus had more active runners than ever before. **Hs**



Wuppertal City Run in the summer of the century: A deep blue sky over the Wuppertal Skytrain and the running enthusiasts of KARL DEUTSCH



On-Site: UT-, MT- and PT-Training in Cuba

After selling of instruments and accessories for ultrasonic, magnetic powder and dye penetrant testing to the Cuban railway company, Dr.-Ing. Werner Roye conducted a training course in the city of Camagüey in Cuba from March 5 to 9, 2018.

The training covered operation of the UT flaw detector ECHOGRAPH 1095 for the inspection of railway wheelset axles, surface-crack testing with KD-CHECK Testing Agents for dye penetrant testing and magnetic particle testing with the DEUTROPULS Hand Yoke with fluorescent and non-fluorescent FLUXA inspection media. For fluorescent testing the UV LED Combi Hand Lamp was applied.

Inspectors of the Cuban Railway Factory and further inspectors from the Institute



Participants of the training in the railway factory in Camagüey in Cuba

for Welding Technologies EMSA in Habana participated in the training. Sales and also the organization of the training was carried out by or Latin American sales partner ACHSE LATEINAMERIKA GmbH with its head office in Stassfurt, Germany, and a sales office in Habana, Cuba. **RW**



Action NDT: Our New Sales Partner in France



Hands-on training at Action NDT (f. l. t. r.): Philippe Murat (Technical Sales), Philippe Henninot (CEO), Frank Foulatier (Technical Sales), Dr. Wolfram Deutsch (KARL DEUTSCH), Christophe Piron (Technical Sales), Dr. Helge Rast (KARL DEUTSCH)

KARL DEUTSCH is pleased to introduce the French company Action NDT (www. action-ndt.com) as a new partner for the sale of ultrasonic products in France.

In August 2018 the inaugural visit of Dr. Wolfram Deutsch and Dr. Helge Rast took place in Paris. The experienced team headed by Philippe Henninot received intensive training and was introduced to the KARL DEUTSCH products. **WD**

KARL DEUTSCH Celebrated the End of the Summer

On September 14th, 2018, the annual summer party took place at the premises of Works 2 of KARL DEUTSCH. Around 170 employees and family members enjoyed the hustle and bustle this time.

This year, in addition to the usual extensive range of food also freshly baked pizza was offered for the first time. All participants could again discover and experience a lot, and the party ended as usual around 11 pm. **Hs**

























Whether there were prizes to win at the hand power meter, or adrenaline surges accompanying the racing car simulation with virtual reality glasses, or balloon sculptures causing big children's eyes, or young and old competing in the air hockey tournament, or shouting with enthusiasm at the bouncy castle ... or just a good conversation: The pleasure was evident on all faces.

Zerstörungsfreies Schmunzeln (Nondestructive Smiling): New Edition with Follow-Up

"Humour is when you laugh anyway!", an old German proverb says. Our longtime sales engineer Hans-Jörgen Andersen proved this sense of humor, having found out from reading the newly released edition of the book "Nondestructive Smiling" that his stories were not printed in the book.

He had already been one of the first colleagues who had followed the call of Professor Volker Deutsch to enrich the new edition of his book with more contributions. Nevertheless, his contributions accidentally did not reach the editorial office.

However, the odd circumstances that led to this highly regrettable organizational mistake would have been worth a separate contribution to the book, the authors Volker Deutsch and Michael Platte later concluded with a smile. But maybe this story will be told later.

However, the revered readership should not be deprived of the entertaining contributions of Hans-Jörgen Andersen, whom many of our customers still remember well from his time in the sales staff of KARL DEUTSCH, and it should therefore be printed here. Like other professional colleagues in the book, he also starts with an event "from the professional beginnings of competent ultrasonic inspectors", and that's also how the eponymous book chapter is called, in which his contribution should actually had to be found. EH



The second, extended edition of the book "Nondestructive Smiling" by Volker Deutsch and Michael Platte has been published by Castell Verlag from Wuppertal

From My Professional Life (by Hans-Jörgen Andersen)

A deep-rooted first experience

The intensive job training in the application laboratory by Messrs. Vogt and Mueller was finished and I felt fit for the first customer visit. After an initial telephone consulting with the customer, I received an ultrasonic instrument and accessories required for the demonstration from our stock. After a two-hour drive with an uneasy feeling in my stomach – my first field work was imminent – I reached my destination, the quality department of a well-known larger company. I was warmly welcomed and after some small talk with coffee and cookies, my instrument presentation was to start in the laboratory on several castings. Quickly the accessories were unpacked, the ultrasonic instrument was turned on, and just as I was about to start the instrument demonstration: Oh ... horrible. No picture ... no sound ... embarrassing! Even after many trials I was not able to turn on the instrument. Apologizing I said goodby.



My experienced contact person from the quality management just said "demonstration effect" ... and smiled. But I ended my first field work in frustration.

When I arrived back home in Wuppertal, I told my boss, Volker Deutsch, about the disaster. Instead of the comforting and constructive words I hoped for, he only said: "Blame yourself!" From that day on, I never drove to customers without having checked the functionality of all components I intended to take with me. Such a "demonstration effect" has never happened to me again.

The railway experience in Pakistan

My first field work abroad in the Far East took me to Lahore, Pakistan, in the 1980s. I was commissioned to conduct an ultrasound course - theory and practice - on our new portable ultrasound equipment at the Pakistan Railway. The railway company ordered 25 engineers to come to Lahore for 10 days from all over the country. The course participants should be familiar with the English language. Via Karachi, heading to Lahore a young employee of our representation expected me there. I could pick up my luggage only two days later at the hotel reception - nevertheless a fortunate circumstance, because from the airport we drove to the hotel by motorcycle in hot humid weather.

My young companion explained to me – it was Sunday noon – that I was expected in the Railway Plant to immediately start the training. By moped we set off. In a lowrise building with huge fans, which somehow reminded me of Albert Schweitzer in Lambarene, the Pakistani sitting on wooden benches in the long corridor, welcomed me with respectful bent-down upper part of the body. A first impressive moment. In the darkened room on a blackboard, I began with the theoretical basics of ultrasound. The written course materials were in English language. Several times I asked in English "Do you understand me? ... ", which was answered by multiple approving nods. After some time it felt strange to me. I asked a little more specifically and learned that five of the "engineers" understood me and all others only were capable of speaking in their native tongue (Urdu). There was no point in continuing this way. I opened the still closed wooden boxes with various packaged ultrasonic instruments and accessories in order to start hands-on explanation of instrument functions and ultrasound.

But immediately at first contact with the power supply system the internal fuses of four instruments blew. I asked for a voltmeter to check the mains voltage and got an oversized glass flask bulb. Of course it lit up when in contact with the power outlet, however, that did not help me. The second attempt - now with a 30 cm by 40 cm wooden volt indicator - was more successful. The pointer deflected to the end of the scale reaching a maximum of 270 volts. Thus, the first day was over. Now flexibility was required: From that time on, every evening I charged all batteries of the ultrasonic instruments in the hotel. So I could start the practical training, at first on the K1 / K2 and later on train and wagon axles, and on wheelsets that were transported by means of donkeys from hall to hall within the railway area.

In retrospect, it was an impressive experience topped by being "locked up" for several hours on the third afternoon, after I ventured to explore the premises alone and on my own initiative. Only after a phone call between the plant management and the Ministry of Transport in Karachi I was released. So, I really had deserved the subsequent evening in the downtown of Lahore for recreation.

No holiday to relax, but richer in experience ...

In the early morning of a holiday followed by a day off before weekend I got a call from my boss "VD" (being the company-internal abbreviation of Volker Deutsch). Shortly before, the plant manager of a large car manufacturer had phoned him at home asking for immediate help and assessment of the situation on the spot, preferably around noon. The plant manager had stopped production and closed the distributing warehouses. All further details should be discussed in the factory.

It was clear to me that a lengthy consideration made no sense, the customer needed help immediately. However, first of all, it was necessary to get the janitor of our company up from his holiday rest by ringing the bell and load my car with various test equipment, which seemed useful to me on-site at the customer's plant, based on the only briefly described problems.

At 2 pm, the front gate informed the plant manager about my arrival. There, a staff of top managers from various departments of the car manufacturer awaited me, and I learned at length the reason for the excitement and bustle: Since recently, the new cars on the conveyor belt have been automatically filled with engine oil. Due to a damage the day before – a new car broke down on the road only after a few miles – they had checked the filling machine and found that there were both irregularities concerning the dosage as well as total failures.

Now a solution was requested to check the correct filling with motor oil directly in the assembly line without any time lag. My idea was to find a position under the engine block from which ultrasound could be used to prove a correct filling level. In the case of

no filling I expected an echo sequence from the motor housing and in case of partial or correct filling an additional echo of the oil surface. Now the production managers requested an immediate action from me, everyone was incredibly nervous. But I had to ask for some patience, my idea had to be carefully put into practice first.

I was presented with various engine blocks of various types with and without oil, as well as test samples, and I started the investigations. An entire night was sacrificed for that, but already the following morning I was able to demonstrate an ultrasonic test with a clear result. That caused a gasp of relief in the plant. Several KARL DEUTSCH ultrasonic instruments with accessories were delivered the same day and employees were instructed accordingly in the factory.

A generous wine gift was given as thanks for the unusual commitment. This action, which has been executed under tremendous pressure and often watching and questioning managers, led to some experience in dealing with senior executives, which was very useful to me in the following years, but unfortunately also caused me some grey hairs.

Interdisciplinary insights and knowledge are helpful in NDT

Once again, I was asked to commission a newly designed magnetic particle testing machine, this time at a manufacturer of automotive steering systems. As usual, the inspection was carried out easily with appropriate test specimens and inhouse manufactured test samples. The acceptance report with the measured magnetization data in hand, I said goodbye to the quality management, hoping to get further orders which were promised for the following year – then also with the promised "MEMORY"-function.

A fortnight later, there was an emergency call from the customer: Urgent on-site presence was demanded, as already the production had to be stopped. Cause: Between 30% and 50% of the pre-machined and tested objects suddenly revealed crack-like indications on our testing machine. Once again, the well-known KARL DEUTSCH presence had to be proven: I set off immediately. At the factory, I first checked the magnetic particle testing machine, the testing agent and the intensity of the UV lamp. Everything was fine and in accordance with the data of the acceptance protocol. Then I asked for the "corpora delicti" - the questionable steering components. Under UV light, I recognized round and linear indications that had not been displayed on previous pre-processed parts. Due to my experience from former activities in a foundry and in the steel industry a premonition arose. I had numerous samples prepared for a metallographic evaluation and taken to the customer's materials testing laboratory. There, under the microscope, I was able to unambiguously identify the "indications" in question as slag inclusions in the form of manganese sulfide and titanium nitride, which was confirmed by both the local metallographer and the head of the laboratory.

Both types of inclusion are non-ferromagnetic and they are displayed during magnetic particle inspection in particular when they are "cut" by machining the surface of the workpiece. This conclusive recognition convinced the manufacturing and quality managers that our crack detection machine worked perfectly well.

A few days later, when I went to the customer again, my note regarding the possible cause of the slag inclusions was confirmed. The supplier of the raw components had changed production from ingot casting to continuous casting and had not "refined" the melt as it would have been necessary. I started smiling and it continued for a long time which possibly many car drivers have noted during my trip back to Wuppertal. **An**



Hans-Jörgen Andersen, engineer, born in 1945

After completing his apprenticeship as a laboratory assistant and attending an evening school for "Chemical Engineering", he worked in the foundry institute before changing to become the Head of Quality Management in well-known foundries with relevant NDT test lines. He joined KARL DEUTSCH in 1981 and worked as an application-oriented consultant for domestic and foreign customers until his retirement in 2007.



KARL DEUTSCH Extends its Management



The extended management of KARL DEUTSCH: Dr. Wolfram Deutsch (left) and Dipl.-Ing. Dietger Schäle

KARL DEUTSCH appoints a Managing Director, reacting to the strong growth of the company in recent years and the associated increasing demands. Dipl.-Ing. Dietger Schäle was appointed Managing Director and Technical Director of KARL DEUTSCH Prüf- und Messgerätebau GmbH + Co KG in February 2019.

"I am very pleased with the trust placed in me and the responsibility that is linked to the position," says Mr Schäle. Dr. Wolfram Deutsch, President of KARL DEUTSCH, explains: "Concerning Mr Schäle, I am very pleased to have gained an experienced colleague from our company for the new position, who supports me in continuing our business in the current style. The steadily increasing demands made this step necessary so that we can continue to successfully develop in the future."

After studying Electrical Engineering at the RWTH Aachen, Dietger Schäle firstly worked for another family business in Wuppertal.

In 2004 he started as a development engineer at KARL DEUTSCH and took over the development management in 2011. When he became Technical Director in the year 2016 he was also given procuration. Mr Schäle is well versed in the widely used technologies of Nondestructive Testing. In recent years, he has mainly dealt with Ultrasonic Testing. **WD**

New Head of the Applications Lab at KARL DEUTSCH



Dr. Helge Rast

On October 1st, 2018, in compliance with a long-term prearranged succession plan, Dr. Helge Rast took over the management of the Applications Lab.

Dr. Rast has been working for the company since May 2015 and is thus well prepared for his challenging task.

Dr. Schuster has changed to part-time employment prior to his retirement and will continue in consulting Dr. Rast, so KARL DEUTSCH is still able to benefit from his decades of expertise.

Dr. Schuster is still in charge for our Quality Management System. Additionally, Dr. Schuster will continue to contribute his many years of experience in the field of our in-house NDT education. **WD**

New Head of MT-Systems at KARL DEUTSCH

Since December 1st, 2018, Stefan Klein has been the new Head of the Division for Magnetic Particle Testing Systems.

Mr Klein has been working for the KARL DEUTSCH Sales Division in Germany for more than 20 years and during this time he has gained extensive experience with various applications in the field of magnetic particle crack testing.

When the opportunity arose to take over the division management, Mr Klein has decided on this new demanding task. We wish him every success in this position.

His successor in the Sales Division is Jens Lappert (M. Sc., see page 15). $\ensuremath{\textbf{WD}}$



Dipl.-Ing. Stefan Klein



New Employees at KARL DEUTSCH



The new employees are introduced from left to right (top down, if needed):

Electronics Technician **Tim Borgmann** started in September 2018 in the division of Magnetic Particle Testing Systems and extends the team of Electrics Manufacturing.

Norman Haußmann (Dipl.-Phys.) worked already part-time in the division of Ultrasonic Testing Systems and from March 2019 he pushes forward the software development in the Division of UT Systems in full time.

Mechanical Engineer **Dmytro Ionov** has been expanding the team of Ultrasonic Testing Systems since September 2018.

Murat Gültürk (Industrial Electrician for Instruments and Systems) will provide service for Magnetic Particle Testing Systems and has been working for us since February 2019. As a trained Electrician **Antonio Randine** has many years of experience in the field of electronic measuring instruments and since October 2018 he has been active in the division of portable test equipment (production, test field, service).

Since January 2019, Industrial Mechanic **Dominik Bruns** has been entrusted with tasks in the mechanical production of Magnetic Particle Testing Machines.

In the division of portable test instruments Mr **Kamillus Pozimski** (B. Sc. Electrical Engineering) has taken over tasks in the fields of production, test and service since the beginning of February 2018.

Jens Lappert (M. Sc.) started in January 2019 in the Sales Division and replaces Mr Stefan Klein who now is the Head of MT Systems. As a Management Assistant in Wholesale and Foreign Trade, Mrs **Stefanie König** has been strengthening the Purchasing Department since January 2018.

Dr.-Ing. **Kirill Zilberberg** started in January 2019 and will be responsible for the sales and support in foreign markets.

Since August 2018, Electronics Technician **Steve Kubala** has been working in the field of production, test and service of portable test devices.

Ilkay Kahraman successfully finished vocational training as an Industrial Mechanic and has been working in the Ultrasonic Probes Division since December 2018.

We wish the new employees a successful start!



Trade Fairs and Events



May 07 - 10, 2019 33rd Control International Trade Fair for Quality Assurance Hall 6, Booth 6217 Messepiazza 1, Messe Stuttgart 70629 Stuttgart, Germany



October 14 - 17, 2019 testXpo 28th Forum for Materials Testing Fa. Zwick August-Nagel-Str. 11 89079 Ulm, Germany

The titles of our lectures, which are held at fairs and conferences, can be found in the section **Dates, Events** on our homepage:



www.karldeutsch.de » Dates, Events



May 27 - 29, 2019 DACH Annual Meeting 2019 Graf-Zeppelin-Haus Olgastr. 20 88045 Friedrichshafen, Germany

Poster Lecture P2 (May 27th, 2019, 5:00 pm, Mo.4.C): **UT-Systems Design with CIVA** Poster Lecture P46 (May 27th, 2019, 5:35 pm, Mo.4.C): **Phased Array Testing Systems for Bars** Lecture (May 28th, 2019, 9:40 am, Di.1.A.4): Phased Array UT (PAUT) and Total Focussing Method (TFM) - Applications with Portable **PAUT-Instruments** Lecturers: Dr. (USA) Wolfram A. Karl Deutsch Dipl.-Geol. Stefan Kierspel Dr. Helge Rast M. Eng. Timur Sayfullaev c/o KARL DEUTSCH Pruef- und Messgeraetebau GmbH + Co KG Wuppertal, Germany

About KARL DEUTSCH

KARL DEUTSCH Pruef- und Messgeraetebau GmbH + Co KG

The owned company privately KARL DEUTSCH was founded in 1949 and develops and produces instruments for non-destructive material testing. Portable instruments, stationary testing systems, sensors and crack detection liquids are produced by 130 motivated employees in two works in Wuppertal. Additional 20 employees in international offices and a worldwide network of dealers support the export business which accounts for more than 50% of the turnover. Characterised by continuous innovation and product reliability, the trade marks ECHOGRAPH, ECHOMETER, DEUTROFLUX, LEP-TOSKOP, FLUXA, KD-Check and RMG



Main Offices and Manufacturing Site for Portable Products (Works 1)

are well-recognised. Our customers are metal producing and processing industries, e. g. steel works, automotive companies and bearing manufacturers. Typical test tasks are ultrasonic weld testing, detection of shrink holes in castings, crack detection in forgings with magnetic particles and dye penetrants, safety components for railway and aerospace as well as the wall and coating thickness measurement.



Offices and Manufacturing Site for Testing Systems (Works 2)