

Charting solar success

In a conversation with Dirk Tegtmeier, co-founder of Ingenieurbüro Mencke & Tegtmeier GmbH, we discuss the exciting developments of the company amidst a rebranding to IMT Technology GmbH. Aside from a new name, what are the latest advancements in Si sensors and what are the plans for seamless transition and global market penetration?

PES: Welcome back to PES Dirk. It's great to talk to you today, at what is a busy and exciting time for your business. Perhaps we could begin with some brief background and an overview of where you sit within the solar market currently?

Dirk Tegtmeier: Thank you, we are working in interesting and exciting times within the solar market. For several years, our focus has been on sensors such as reference cells and temperature sensors, catering to clients in the monitoring industry, inverter manufacturing sector, and system integration field.

While our sun simulators and measurement test stands have somewhat receded into the background, we still undertake significant projects, particularly for research institutions. Being a prominent player in the reference cell sector, we've experienced growth alongside the international market over the past four years. In September last year, we successfully expanded our production line, effectively doubling the production area for our sensors.

This expansion has greatly enhanced our capacity to produce more sensors, reduce delivery times, and provide additional

storage for the components essential to our production process.

PES: Si sensors have always been a big focus for you, with the latest versions boasting new improvements. Can you elaborate on these, particularly regarding measuring uncertainty and robustness against burst and surge events?

DT: Throughout the year, we are dedicated to optimising our reference cells to achieve the highest possible performance and minimise uncertainty. This involves leveraging the latest electronic components and refining other crucial aspects of the entire process.

For example, enhancing the master reference cell can significantly improve the calibration process, thereby reducing uncertainty across the board. Additionally, we consistently provide information on the measurement uncertainty across the entire temperature range, spanning from -35 to 80 degrees Celsius, ensuring comprehensive transparency for our devices.

PES: How significant is the enhancement in measuring uncertainty, and what impact does it have on the accuracy and reliability of the sensors?

DT: Our improvements are always small, but significant steps. Due to the inherent challenges in measuring irradiance compared to voltage or current, adjustments can be made using specific screws. By facilitating these adjustments, we contribute to the improvement of monitoring systems as well.

PES: Were there specific technological advancements that enabled the development of the high end and high precision Si sensor, BigRef? And what applications or industries do you anticipate it will have the most impact on?

DT: Our large area reference cell called BigRef was developed in cooperation with the nearby Institute for Solar Energy Research (ISFH).

In 1993, we became the first start-up emerging from ISFH, and our collaboration has remained robust ever since, particularly in research projects and developments. BigRef serves as an excellent example of what can be achieved when scientists and engineers collaborate on a product.

Through advancements in both the lamination process and construction, we've ensured that the large area reference cell can be mounted on nearly every temperature controlled chuck used in laboratories worldwide. Calibration according to DAkkS standards can be performed at the CalLab of ISFH. Even the PTB, Germany's National Institute for Metrology, uses CalLab for calibration, while our small master reference cell for our reference cells undergoes calibration at PTB.

However, our application extends beyond calibration; many customers also utilise BigRef for measuring the uniformity of their sun simulators. While our primary choice is monocrystalline cells, we have also manufactured BigRef units with IBC cells.

PES: You are also in the process of renaming the company to IMT Technology GmbH. What are the motivations behind this decision?

DT: Our original company name traces back to our founding as an engineering bureau specialising in the planning of building-integrated PV systems. Over the years, we diversified our offerings to include the development and production of various measuring systems, such as I-V

curve analysers, sun simulators, and silicon irradiance sensors.

These systems played a pivotal role in assisting institutes and industries in enhancing the quality of their products, thereby emphasising our commitment to quality assurance across the spectrum, from research and development to operational stages.

After three decades of evolution, we have transitioned into a production company primarily focused on supplying sensors essential to the solar industry, with a smaller emphasis on high precision measurement projects. Our products are sold directly to customers worldwide.

Nearly 20 years ago, we established a partnership with Mark Dettmer in Buffalo, NY, who foresaw limitations in selling under our original company name in the US market.

Consequently, he proposed naming his company IMT Solar, with the intention of serving as a selling and service partner for Ingenieurbüro Mencke & Tegtmeier. Interestingly, it took us two decades to arrive at the same realisation.

PES: Do you think it will enhance international recognition and accessibility?

DT: Certainly, we are seeing a growing international presence for our products. Our reference cells have earned a strong reputation, with many customers identifying them not just by the type label on the back of the sensor, but also by the distinctive design of the sensor housing.

With the adoption of a more internationally oriented company name, we anticipate even greater global recognition in the near future, although we understand that this may not happen overnight.

PES: Explain what strategies are being employed to ensure a smooth transition from Ingenieurbüro Mencke & Tegtmeier GmbH to IMT Technology GmbH, both internally and externally.

DT: During a comprehensive assessment conducted in collaboration with a business consultant, we examined the current status

of our company, reflecting on the past three to five years. The primary objective was to chart a course for the future succession of management, prompted by Detlef Mencke's and my 60th birthdays this year and our desire to initiate the transition of leadership to younger experts in a timely manner.

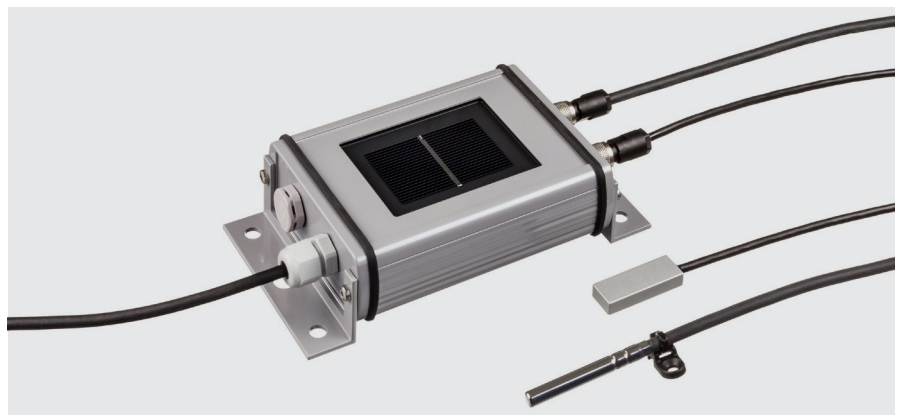
Ultimately, we determined that Nikolai Maris, our authorised signatory and partner of 15 years, would assume my role in management starting this year. This transition was implemented at the beginning of May. Since then, I have been in partial retirement, focusing on accounting and smaller measurement technology projects, such as I-V curve analysers. Although I will retain my position as a partner and shareholder, I will disengage from day-to-day operations. Thus, Nikolai Maris and Detlef Mencke will continue as managing directors for the foreseeable future.

As part of this evaluation, we also deliberated on the name of our company. Three years ago, recognising our predominantly international market focus, we decided to rebrand to a more globally appealing name. Engaging with a reputable publicity agency that understood our objectives and ethos, we embarked on a search for a new identity. Collaborating with our employees, we settled on IMT Technology. The acronym IMT represents 'Ingenieurbüro Mencke & Tegtmeier'; and aligns with our slogan 'Intelligent Measurement & Testing'.

Subsequently, we took steps to secure all relevant internet domains under the new company name, registered the trademark in Germany, and obtained trademarks through WIPO for numerous other countries. Following these legal procedures, we commenced preparations for a refreshed company presence online and in printed materials. The management team, particularly Nikolai and Detlef, dedicated nearly fulltime efforts to this project from December 2023 to May 2024, ensuring a seamless transition to the new brand identity.

You can see the result at InterSolar and on our website.

PES: As many as 80% of your deliveries go to non German speaking countries



don't they? With a significant portion of deliveries going to non German speaking countries, is your plan for the rebranding to increase market penetration and brand awareness in international markets?

DT: It's understandable that customers in regions like South and East Asia may find our previous company name challenging to pronounce or remember, leading them to resort to abbreviations like M&T or ib-mut. The introduction of IMT Technology aims to alleviate this communication barrier and provide a more accessible and memorable name for our customers.

We anticipate that this new branding will facilitate clearer and more effective communication when referencing our products and services, ultimately enhancing our relationships with customers in these regions.

PES: You will be relaunching at InterSolar; do you envisage this impacting the company's positioning within the industry and its perception among existing and potential clients?

DT: Our relationship with our key customers is characterised by close collaboration, often resulting in the development of product types tailored to their specific needs. Given this close partnership, we made sure to inform them well in advance about our company name change.

Fortunately, the majority of our customers have had no issue with this transition, as it only affects our name and nothing else. Importantly, our operational core remains unchanged: we continue to operate from our headquarters in Hameln, Lower Saxony, North Germany, utilising the same production line, staffed by the same dedicated employees, and led by the same management team.

Additionally, our recent expansion has doubled our production space, ensuring that we are better equipped than ever to meet the demands of our valued customers.



PES: In terms of future developments, what areas of sensor technology are you focusing on, and what are the key challenges and opportunities you foresee in those areas?

DT: We are committed to enhancing our existing product line by implementing significant improvements wherever and whenever feasible. Furthermore, our focus remains on continuous research and development of new measuring devices and systems aimed at improving the quality of the PV industry's outputs. For instance, we are exploring the possibility of developing a nondestructive detector for back sheet materials and monitoring water intake into lamination materials, primarily Ethylene-Vinyl-Acetate (EVA).

Our overarching goal is to elevate the quality standards within the PV industry, encompassing both module production and design, as well as ensuring long-term

stability throughout the lifespan of PV systems. This commitment will guide our efforts in the near future.

As an example of our dedication to innovation, last year we installed a multi-module test stand at ISFH featuring an electronic load capable of conducting I-V curves tailored to different module or cell types. These curves can be swiftly obtained within milliseconds or seconds, in both forward and backward directions, allowing us to identify hysteresis effects. Notably, the measurement settings can be customised for each module channel, ensuring optimal results.

PES: Lastly, it would be interesting to hear about your long-term vision and goals as you evolve under the new identity how you plan to maintain leadership in the global sensor market.

DT: Renaming our company to IMT Technology signifies our commitment to further engaging with the international market, building upon the strides we have made in recent years. As leaders in our field, we understand the importance of continuous improvement and the necessity of competing with other producers to maintain our position at the forefront of the industry. This competition serves as motivation for us to continually enhance our products and services, striving for excellence every day.

Our unwavering dedication to delivering the highest quality products, proudly labeled 'Made in Germany', ensures that we remain a trusted and valued partner for all of our customers worldwide. With IMT Technology, we are poised to strengthen our global presence and solidify our reputation as a premier provider of innovative solutions in the PV industry.

