

Setting standards for furnace health management

Having worked for one of the glass industry's leading furnace contractors for more than 30 years, Fred Aker was recently confirmed as Vice President of Sales and Marketing at PaneraTech Inc. He joins a passionate and innovative team that is becoming increasingly influential in the management and optimisation of glass melting furnaces throughout the world.

It took just one visit to the PaneraTech offices in Virginia to convince Fred Aker to accept an invitation to join the innovative provider of furnace life optimisation solutions. "They have a young, passionate team and everyone was excited about what they were doing" he explains.

In recent years during his role as Sales Director at SORG, Fred Aker had heard PaneraTech CEO, Dr Yakup Bayram make a series of enlightening conference presentations about SmartMelter technology and was fascinated by the results achieved on behalf of leading international glassmakers.

Furnace health management focus

PaneraTech was established almost a decade ago to provide deterministic furnace health information based on SmartMelter radar technology. The business started with the support of Libbey and O-I, along with the US National Science Foundation to fund the development of a radar solution with multi-million dollar backing. This radar-based furnace health assessment solution has been commercialised and used for the last 2.5 years for furnace risk management and repair/rebuild optimisation.

According to Yakup Bayram, the company is basically identifying any required maintenance or potential furnace failure between one and three years before the human eye or any thermal technology can see the extent of deterioration. As the business grew globally, it became apparent that customers expected PaneraTech to aim even higher and offer enhanced services along the lines of furnace



PaneraTech CEO, Dr Yakup Bayram (right) and Fred Aker, the company's recently appointed Vice President of Sales and Marketing.

health management.

In particular, they wanted something that not only uses radar but also incorporates information from audits, visual, thermal and endoscopy inspections and production data to assess the health of the furnace

objectively. And as Dr Bayram emphasises, this type of system will offer the best objective advice to customers in terms of repairs and maintenance planning. "What differentiates us from everyone else in the industry is that we do not own a repair service and we never plan to" he says. "This provides us a platform where we can objectively tell customers what repairs they truly need, without any conflict of interest."

Fred Aker brings a detailed knowledge of furnaces to the organisation, together with considerable experience of lifecycle processes and a thorough understanding of how customers think and plan for major capital investments. "Just as importantly, Fred also brings a good network of relationships that can support the adoption of SmartMelter as the new industry standard in furnace health management."

In a similar vein, Fred Aker believes that partnerships will be important in the future. "Furnace designers need to be engaged about the best practices



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to allow easy SmartMelter inspections” he suggests. We need to talk to repair companies so that their overcoating materials and back-up gratings allow for ongoing inspections. We also want to talk to repair companies about using SmartMelter as a platform to better serve our common customers.”

Building management strengths

Under the leadership of Yakup Bayram, USA-based PaneraTech has invested strongly in the creation of a dynamic management team to deliver effective solutions that optimise the life of glass melting furnaces. “There are two things that are common among our team leaders” Dr Bayram contends. “They have a passion for what they are doing and they have the attitude of ‘whatever it takes to get it done’. When you combine passion with such a self-driven attitude, anything becomes possible in a short period of time.”

Dr Alex Ruege, for example, leads the company’s Data Analysis and Reporting team. Every radar inspection goes through a process that traces every single radar measurement and documents every process the data goes through to ensure that accurate reporting is delivered to the customer. It is basically the same process used by major hospitals to deliver a final health report to patients based on their MRI, X-ray, PET or CAT scans. In the last two years, Alex Ruege has spent a significant amount of time building the infrastructure to establish a process that delivers a furnace health report to customers.

To build advanced analytics on the data collected from many different furnaces across the globe, Dr Vladimir Ivanov was recently recruited to lead PaneraTech’s Data Automation and Analytics team. Essentially, he is supporting the existing process to ensure its efficiency, as well as laying the foundation for machine learning and artificial intelligence for the predictive maintenance of furnaces.

In addition, the company is expanding its software footprint with the upcoming SmartMelter XSight Furnace Health Management platform. This product is rapidly growing the software team under the leadership of Umut Akdemir, who was responsible for establishing agile software development practices that allow PaneraTech to respond quickly to customer needs, while ensuring quality. “Umut has established an amazing culture that replicates the best practices from Google and Facebook for high performance software development” says Yakup Bayram.

Bearing in mind that an important aspect of the company’s work involves using SmartMelter sensors to perform furnace inspections, multiple sensors are being introduced this year, based on customer requests. This product development and equipment maintenance work is led by Michael Tsui, who has introduced a critical process to trace and track every sensor used in the field to ensure they are properly maintained and any shortcomings are quickly addressed. “In the last two years, Mike has developed a process to maintain and improve quality management of our sensors so that we can quickly scale our equipment in regional offices in Asia and the EU, without sacrificing service quality” Dr Bayram explains.

“The one person who I don’t think I could thank enough on our team is Kristin Rohrer” he continues. “She joined us to co-ordinate our inspections but went above and beyond in establishing an infrastructure that tracks all of our projects and provides automation in managing multiple projects to the satisfaction of customers.”

Sales and marketing focus

It was at the beginning of July 2019 that Fred Aker officially joined the organisation as Vice President of Sales and Marketing. Arguably, his first task has been to relieve Yakup Bayram of direct sales management responsibility, the CEO having personally sold inspections to clients in 40 different countries, while building a team and providing the necessary vision for product development. “It is amazing what he has done but there are limits!” ▶





SmartMelter inspection on a glass melting furnace.



SmartMelter radar technology is employed to provide deterministic furnace health information.

PaneraTech is a very process-oriented company and while it still feels like a start up in many respects, the team has already negotiated many of the associated 'growing pains'. "The sales process is still in version 1.0" Fred Aker suggests. "My immediate

goal is to build a sales organisation. This team will be a combination of direct employees and regional agents where necessary. PaneraTech now has the processes and infrastructure in place to grow. Now we need to scale up sales to match this." In addition



Fred Aker (right) has taken over direct sales management responsibility at PaneraTech, allowing Yakup Bayram, CEO to concentrate on delivering the vision required for new product development.

to planning maintenance, data has been used to postpone rebuilds without introducing additional risk. This has an important influence on the environmental impact of glass manufacturing, as well profitability.

Mr Aker will continue to be located at the heart of Europe at Lohr am Main, Germany, one hour east of Frankfurt Airport. And as PaneraTech expands its offerings, he will be travelling extensively to explain the additional value propositions to new and existing customers.

Regional offices are located in the USA, Turkey and Japan, with additional offices planned for Germany and India. "As we grow closer to our customers, the presence of local support is becoming more important to this vision" Dr Bayram confirms.

"Recently, a major flat glass producer reached out to us to perform a SmartMelter radar inspection on a furnace that has between one and two years left before rebuild. They wanted to use SmartMelter to identify any design issues that may have led to weak spots in the furnace that they were not aware of. This would help them avoid this issue in a new furnace design."

Broader service objectives

Until now, PaneraTech has been more akin to a radiology service provider but strategies are in place to turn its furnace health service into the glass industry equivalent to that provided by a specialist family doctor. To accomplish this goal, the company is learning more about furnaces, treating them instead like its patients, engaging customers more in addressing specific concerns and offering advice on how to care for their furnaces. "We never see ourselves becoming surgeons, like repair specialists who perform hot and cold repairs" says Yakup Bayram. "We are positioning ourselves as the objective voice in the room, whose only goal is to make sure our patient, the furnace, does well and makes it safely and soundly to its rebuild with minimal cost and risk to glass manufacturers."

To accomplish this objective, PaneraTech is adding experts to the team and improving its existing process. "We are following the best practices in operations from human health management services to offer furnace health management services" Dr Bayram explains. "Major service programmes will be released in 2020, including zero glass leak guarantee programmes, a full furnace health management programme and a second expert opinion programme. These are new offerings that will move the industry in a very favourable positive direction for better furnace health management."

Positive partnerships

The PaneraTech team is now witnessing a movement among furnace design and repair companies to engage in SmartMelter-friendly design offerings. "We are extremely happy with this because they are already embracing the future and recognising that this technology is destined to become the de-facto industry standard in managing furnace health" Yakup Bayram concludes. "This is turning out to be a win-win for everyone in the industry." ●

Further information:

PaneraTech Inc, Chantilly, VA, USA
 tel: +1 703 719 9666
 email: info@smartmelter.com
 web: www.smartmelter.com