

All pumped up

Eric Taberlet, President of the Business Unit Semiconductor & Coating at Pfeiffer Vacuum, joined us at PES to bring us up-to-date with their latest vacuum advances and 'Green LabFab' in France.



Eric Taberlet

PES: Welcome back to PES Solar/PV magazine. Thanks for talking with us. Would you like to begin by explaining a little about the background of your organisation and how you currently serve the solar industry?

Eric Taberlet: Vacuum design and technology are very critical for a number of key enabling processes serving major industries that are changing our daily life, such as telecommunications, connectivity, medical, food, aerospace, advanced research.... just to list a few.

Pfeiffer Vacuum has been active in these industries for more than 125 years. It is just a natural move to develop our activities in key emerging vacuum industries that have been gaining momentum over the last ten years, like solar, LED and AMOLED.

The combination of strong vacuum process know-how and a complete range of vacuum solutions is positioning our organisation as a leading vacuum player in the solar manufacturing area. Our business development in solar started more than ten years ago, and we are constantly evolving with the market to meet both thin film and wafer based technologies' needs.

PES: You are active in a number of industry sectors. How important is the solar business to Pfeiffer Vacuum?

ET: As mentioned before, the solar segment has been a focus for Pfeiffer Vacuum for the past 10 years. Of course, as you know, this industry is still undergoing development and still facing lot of challenges, both industrial and technical. These are forcing a number of consolidations and up-down cycles.

Despite these challenges, we believe in the long-term development of solar and our organisation is committed to supporting the growth of the industry and of course, taking part in it.

As a global company, Pfeiffer Vacuum is part of major investment projects in both thin film and wafer based technologies. These projects are mainly Asia-driven investments, but we still have a strong equipment base in Europe and particularly Germany that contributes a lot to this business.

PES: Is solar/PV a still a growing business area for you? How are you capitalising on this growth?

ET: The solar market is definitely still a growing area for Pfeiffer Vacuum. As mentioned before, despite the cycles, the strong consolidation and the capacity adjustment that the industry has been through over the last few years, solar remains an attractive segment for Pfeiffer Vacuum.



The growth today is driven by solid demand from emerging regions in south east Asia and also first tier investments in upgrades and technology differentiation. So we are definitely entering the second development stage of the solar industry where we are looking into performance and cost reduction by technical differentiation and improvement. This is where key players like Pfeiffer Vacuum have an important role to play.

Keeping our strong European and Asian equipment business base, as well as a strong connection to the first tier end users, means we have been able to participate fully in the ramp-up phase since H2-2015 and this is accelerating in 2016.

PES: Could you tell us about your ASM 340 leak detector?

ET: The ASM 340 is our bestselling leak detector and the result of years of experience in vacuum instrumentation development and manufacturing. Indeed, 2016 marks our 50th anniversary of leak detection activities and we are proud to celebrate this event by introducing new solutions to the market. The ASM 340 is the outcome of a combination of strong vacuum instrumentation, designed by skilled engineers, with the know-how acquired from the hundreds of applications we serve.

“This unique vertically integrated approach gives us the opportunity to develop products in real accordance with customer needs”

Eric Taberlet

The ASM 340 is a multipurpose leak detector, which means it can be used for maintenance purposes, as well as in a production environment in a number of industry sectors. Whatever the volume of the part to be tested, from small to big test volumes, this product doesn't compromise on performance, reliability, up time and ease of use. The ASM 340 is the best in class unit of its category, with unique features for vacuum or sniff testing.

PES: What are the advantages, both in technological terms and for the end user?

ET: Pfeiffer Vacuum is the only leak detector manufacturer that is able to design leak detectors using in-house components for the pumping system (turbo and backing pumps) as well as the analysis system, which are the most strategic elements of such devices.

This unique vertically integrated approach gives us the opportunity to develop products in real accordance with customer

needs. It is also the way to guarantee the high quality level of our products, their reliability, together with the high level of support we offer to our customers.

The ASM 340 integrates state of the art electronics, dual, independent, long lifetime filaments and a high performance pumping system, all in a compact table top unit. Human machine interface is also a major concern as the leak detector can be operated by people with various skills, from the beginner to the highly qualified scientist. For this reason, user friendliness remains a constant concern. There are 9 languages available to facilitate the operation of our leak detectors anywhere in the world. This is definitely what major end users from the industry, including the solar players, are looking for when selecting leak detector suppliers.

PES: Pfeiffer Vacuum is known for being environmentally friendly. Could you tell us about the 'Green LabFab' we are hearing about in France?

ET: Launched in 2009 in Annecy, France, the Green LabFab project is part of our industrial and environmental excellence program. It is a component of the research and development of manufacturing processes for the next-generation pumps, serving in particular the coating and photovoltaic markets, which have specific constraints.

Benefiting from an aggressive investment plan with a focus on innovation and the development of cutting-edge technology, the Green LabFab project received support from the state, the region and the Annecy metropolitan area.

PES: How did this lead to the 'Eco Design'?

ET: The Green LabFab initiative was the first step of a long term program, focusing on a sustainable industrial and developmental approach. This platform provided human resources, research and development as well as precise, flexible production equipment to pursue our improvement plan, starting with the production environment and moving naturally to the mainstream of the development cycle with 'Eco Design' concepts.

Today, this is part of our vacuum roadmap, which not only focuses on product performance achievements but also on its energy consumption, to bring down the production costs and lower the carbon footprint of the manufacturing processes through design.

The main target was to reduce as much as possible the matter (weight) to energy (kW) ratio per pumping speed unit.

PES: Are there cost implications in using this method?

ET: In the manufacturing area, the key benefits of implementing such a LabFab are: saving power consumption for machining tools and products, compliance with RoHS standards, zero waste and recycling of all the fluids (water, oils). A key point was also to move from gas source heaters to a biomass one. Plus all of this

“The Pfeiffer Vacuum Group is always looking for ways to improve products and develop new solutions”

Eric Taberlet

together, of course, improves our competitiveness and reduces our utilities and manufacturing costs.

The 'Eco Design' on the other hand will also play an important role in the development not only of eco-friendly products but solutions which will decrease the cost of ownership (CoO) for our customers.

PES: Geographically speaking, where are the key markets for Pfeiffer Vacuum and do you have any plans for expansion into other areas?

ET: The key regions for Pfeiffer Vacuum's solar development are of course China, Germany with a strong equipment/machine base, the rest of Asia (Korea, Taiwan ...) and the USA.

A special focus will definitely be given to the emerging south Asia regions: Malaysia, Thailand, and Vietnam. India and the Middle East are also potential development regions for solar, with some announced capacity that also represents a future opportunity where Pfeiffer Vacuum aims to play a role.

PES: Which aspect of the industry provides the most satisfaction for you right now?

ET: Currently the major investments are coming from the c-Si capacity ramp ups and this is driving, I would say, more than 90% of the current capital spent in the industry.

The focus is on the improvement of the production performance as well as processes and technology towards higher efficiency cells.

Pfeiffer Vacuum is, of course, very active in the development of new technology trends such as the so-called PERC cells, which we believe will be driving the next 2 or 3 years' investment in c-Si.

PES: And conversely, what presents you with the biggest challenges?

ET: Our industry is changing fast and so are the related vacuum requirements, constantly putting pressure on pump suppliers to adapt - and adapt fast.

Yes, it is a challenge to keep investing in highly demanding technical markets that, at the same time, are cost driven.

The Pfeiffer Vacuum Group is always looking for ways to improve products and develop new solutions. Technology and innovation have been the drivers for Pfeiffer Vacuum, as these are key differentiators in this highly demanding vacuum industry. And we will continue to invest in these.

PES: What are your thoughts about prospects for the rest of 2016 with regard to your organisation and the solar industry in general?

ET: 2016 is a very interesting year for solar; it marks the return to positive investment in the solar industry, while the demand for solar installation is forecast to grow above 65 GW.

This solid demand is bringing confidence in capacity investments and this is what we are looking for from the capital equipment side. We cannot expect this to be at the level of 2010-2011, but the supply-demand gap is closing and, after four years of consolidation, 2016 is finally marking the rebound.

Pfeiffer Vacuum, of course, is taking part in the industry rebound. We are positioned with high market shares in the c-Si and thin film market and so will be able to enjoy strong growth in revenue during 2016. ■

www.pfeiffer-vacuum.com