

Intellectual does not automatically mean wise.

Roger Köppel

CEO's Note

Dear Reader,

At ESPROS, we deal with photonics every day. In most cases, it is about very few photons that we "capture" with our highly sensitive photodetectors and convert them into electrons. So it is very small energies of light that we deal with. The energy of a photon at a wavelength of 905 nanometers is $61 \cdot 10^{-24}$ Watt hours (Wh). The non-scientific notation is 0.000,000,000,000,000,000,061 Wh. That's very little energy. Or, from the other point of view, it needs

16,400,000,000,000,000,000 photons

for one Watt hour of energy. That's quite a lot of photons for just a little bit energy!

At the other end of the energy scale are the really big values. Take the sun, for example: it emits $3.5 \cdot 10^{30}$ Wh per year into space. Of this, approx. $1.7 \cdot 10^{21}$ Wh hit the earth. If you now take the energy requirement per inhabitant in Germany for example, which is approx. 40 Million Wh per year (according to Wikipedia) and extrapolate this to the entire human population of approx. 8.5 billion, people only consume 2 millionths (2 ppm) of the total energy that the sun gives us year-in-year-out. Ok, not all the energy from the sun that reaches the earth can be used. Some of the energy is reflected back into space, some is absorbed by the atmosphere, by land and by water.

The use of the almost inexhaustible energy has come a long way. Unfortunately, what is still miss-

ing is an energy storage device that guarantees availability independent of time. Figure 1 shows real figures of solar energy over the year. The variation between summer and winter is huge. In the winter months, only about an eighth of

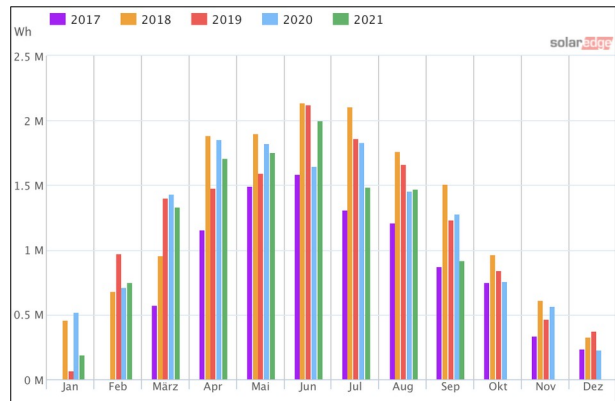


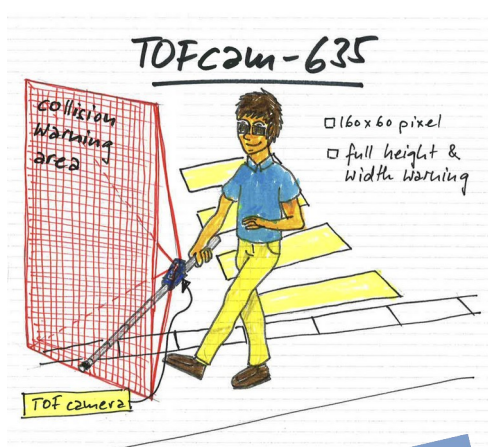
Figure 1: Solar energy production of a small solar power plant in the southern Rhine valley in Switzerland (Source: B. De Coi, Maienfeld)

the energy is available compared to the peak months in summer. Therefore the production in summer should be able to be saved into winter. If this long-term storage works on a large scale, the energy supply problem will be solved in the long term. Let's go for it!

Beat De Coi

PS: And now, I hope that I have calculated everything correctly. So many zeroes ...

Electronic white cane



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VISION

TOF cameras can help people with a visual impairment to localize themselves in their environment. Such cameras can also detect obstacles which are in or along the walking path of the person. e.g. sidewalks, cliffs or objects which typically cannot be detected by a white cane will reliably be detected by a TOF camera. The TOFcam-611 or TOFcam-635 are compact, require low power and are sunlight-proof devices which could provide an artificial eye on such a white cane. Click an image to check it out.



Figure 1: TOFcam-611



Figure 2: TOFcam-635

Pietro, Head of Production Semiconductors

What are your responsibilities at ESPROS?

I'm Head of Production for our semiconductor manufacturing department. My priority is to ensure that our customers, both internal and external, receive their goods on time without any defects. With the current global shortage of certain raw materials. This is a real challenge, fortunately I have a really motivated team around me who actively support me in every possible way.

How long have you been working with ESPROS?

I began working with the company on 1. August 2019. Fun fact, 1. August is the Swiss national holiday.

What do you most enjoy about working here?

I'm proud to be able to play my part within this ever-developing TOF technology, and I'm very curious about where this journey will take us. Thanks to ESPROS' open culture you get a great insight into all the other departments. So you are always very much involved not merely present!

Where are you come from and where do you live?

I have Italian roots but I live in the Principality of Liechtenstein, Switzerland's even smaller neighbor. Most of my family lives there as well.

What do you like doing in your spare time?

I love traveling to learn more about other countries and cultures, away of the typical tourist trails. Ever

since I was a child, I have been fascinated by martial arts and I participate in several types. I also spend as much time as I can with my family. Other than that, I like to take off on my motorcycle.



Constant improvement process

The pandemic has taught us many things, or to be more accurate, emphasized what some businesses may have somewhat neglected. While ESPROS' driving force has always been convincing customers of the incredible application possibilities our chips and TOF products. However, I would argue that one bit of basic housekeeping is just as essential, now more than ever. And that is running an effective improvement program, constantly striving to improve ourselves and our processes so that we as an organization benefit and consequently and most importantly our customers do too in terms of products and services.

The "beauty" of pushing for optimization is that often many improvements are internal and can be made independent of external factors, such as supply chain issues. In other words, we are often faced with "can't see the wood for the trees" problems, which require a different point of view.

Which is why every employee at ESPROS is encouraged to critically assess processes that involve them. And give their feedback up the chain. As we

are at the forefront of developing new technology. Constantly questioning accepted "norms" and envisioning a better way, lies at our heart. Everybody in the team is a potential source.

While breakthroughs with a new product or customer get the heart beating faster. There is so much to be said for the quiet satisfaction that comes from simply finding a "better way".

First steps first: It's important to differentiate between improvement (always welcome and appropriate) and optimization. Improvements are the building blocks of optimization. The trickiest thing about optimization is its timing. Premature optimization suffocates innovation and success. We are always learning. Therefore, striving to improve: Should be a continuous process. Whereas optimization itself has its time and place. It remains nevertheless, essential.

by Liam Sherlock

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