

**You have to be in love with success, not failure.**

*Ernst Bloch*

## CEO's Note

Dear Reader,

Recently, I stumbled over a quote from Ernst Bloch which is at the top of this newsletter. I would use the words "thinking positive" to say somehow the same. But the words from Bloch are so much more powerful. I really love them.

Since I was not familiar with the name Ernst Bloch I did some research about this person. Must be somebody very special. Well, I learned that Ernst Bloch is the philosopher of «concrete utopias», daydreams, the book "Principle of Hope". At the center of his thinking is the person who thinks beyond himself. Man's consciousness is not just the product of his being, it is rather endowed with "surplus". This "surplus" finds its expression in social, economic and religious utopias, in the fine arts, in music and in daydreams.

The keywords are "thinking beyond". How is it possible to start a rocket from a launch pad, send some satellites into space and land the rocket



*Starship landing May 5, 2021  
(Source: SpaceX website)*

safely at or near the launch pad to use it again? An incredible achievement which seemed impossible few years ago. Now, it's reality by Space-X. What made this happen? Even I don't know Elon Musk personally, but it must be him who made people around him become addicted to his ideas, not becoming doubtful when there was a setback. And setbacks were many on their way.

How is it possible to achieve a quantum efficiency of more than 70% at 905nm for TOF, LiDAR and other high performance imagers? How is it possible to clock CCDs with several hundred Megahertz and at the same time detect few photons for ranging? For sure not with being scared always seeing the abyss ahead! This is possible by being in love with success, to use the quote from Ernst Bloch.

Once you achieve or even exceed the given goals, you will fall in love with the success.

Beat De Coi

## epc138 - High Sensitive Light-Barrier Made Easy

The epc138 is one out of the epc13x photo diode amplifier range. These devices convert modulated photo current into either analog or digital outputs. The epc13x range of products are monolithic, integrated highly sensitive photodiode amplifiers for light-barrier, light-curtain and similar applications. They amplify current pulses from reverse-biased PIN photodiodes (e.g. epc200, epc3xx) and discriminates the amplified input light pulse before driving the open-drain output stage.

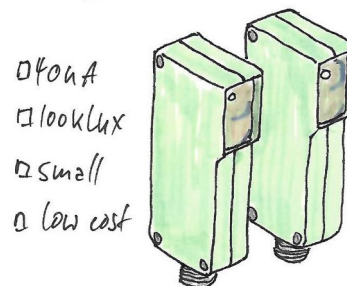
A speciality of these devices is the photo diode frontend circuitry which eliminates DC photo current up to 3mA from the photo diode. This allows the suppression of ambient light of more than 100k Lux without additional circuitry. This circuit is called "Gyrator". It works like a huge inductor which has a nearly zero impedance at low frequency and DC, but a high impedance at operating frequency.

The devices are controlled by an internal digital controller which needs no external clock signal. They can be connected in anti-polar mode to the power supply lines for decreasing the wiring effort in matrix operated light-curtain products. The devices are optimized to utilize the minimum count

of external components. They allow the design of short to long range light-barriers from a few millimeters up to tens of meters.

Find out more [here](#).

*epc138 + epc200*



*Light barriers using epc138 and epc200 chips*

**What are your responsibilities at ESPROS?**

I'm a software engineer but my main responsibility is firmware development for the TOF camera modules. It involves designing the software architecture and programming the micro-controllers inside the camera to get the required functionality. I work on both core feature developments and customer projects.

**How long have you been working with ESPROS?**

I started my work with ESPROS after I received my Master in Computer Science from the University of Basel this year.



*Niluka (5th from left) with some camera design team members*

**What do you most enjoy about working with ESPROS?**

ESPROS has a unique set-up for a growth-phase company. We have in-house departments from TOF sensor design to camera module production. Having colleagues from diverse backgrounds under one

roof facilitates an ideal environment for knowledge sharing.

**Where are you come from and where do you live?**

I'm originally from Sri Lanka where I grew up and did my schooling up to a bachelor degree in engineering with a major in computer engineering. Since I got the opportunity I moved to Switzerland where I've been living for three years. One of my hobbies is mountain hiking (see below), I decided

to live in Chur, the oldest town in Switzerland. Chur is an ideal starting point accessing the mountains of the Canton Grisons.

**What do you like doing in your spare time?**

My hobbies are reading, mountain hikes and basketball.

**Photonics Award 2021**

The first year after the pandemic year 2020, a more relaxed ceremony could take place to handover the ESPROS Photonics Award 2021. The ceremony took place on September 24th, 2021 in the auditorium of the University of Applied Sciences in Chur. The award went to Mr. Lars Stadler which achieved a score of 5.76 of the Swiss grade system (best is 6). This can be translated to "magna cum laude".

Photonics is a three year bachelor degree course with the University of Applied Sciences of the Grisons for people with a high school certificate. The University is an innovative and entrepreneurial university of applied sciences with over 2,000 students. It trains people to become responsible and skilled professionals and managers. As a university of applied sciences with strong regional roots, University of Applied Sciences of the Grisons attracts students from beyond the canton and even from outside Switzerland with its welcoming atmosphere. University of Applied Sciences of the Grisons offers a range of bachelor's, master's and further education programs in Architecture, Civil Engineering,

Computational and Data Science, Digital Science, Digital Supply Chain, Management, Mobile Robotics, Multimedia Production, Photonics, Service Design and Tourism.



*Prof. Juerg Kessler, Dean of the University of Applied Sciences of the Grisons, Award Winner Lars Stadler and Beat De Coi, CEO of ESPROS Photonics and member of the Swiss Academy of Engineering Sciences SATW*

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