



## A bright and light future

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Over the last 4 years the Danish lighting company LED iBond has experienced a fantastic development that recently culminated in receiving a great award at LUX Awards 2018, which is the largest award ceremony in Europe for lighting manufacturers. Behind the innovative company stand the two entrepreneurs Lars Frederiksen and Rolf H. Sprunk-Jansen, who in a few years have contributed to change the idea of what lighting should be able to do.



*(Text by Alexander Tengbjerg)*

It is no understatement to call the Danish lighting company LED iBond an underdog at the big LUX Awards this year. The company competed against 13 manufacturers and developers of lighting systems some of which are heavyweights of the industry, and therefore the LED

iBond team had gone to England without great expectations.

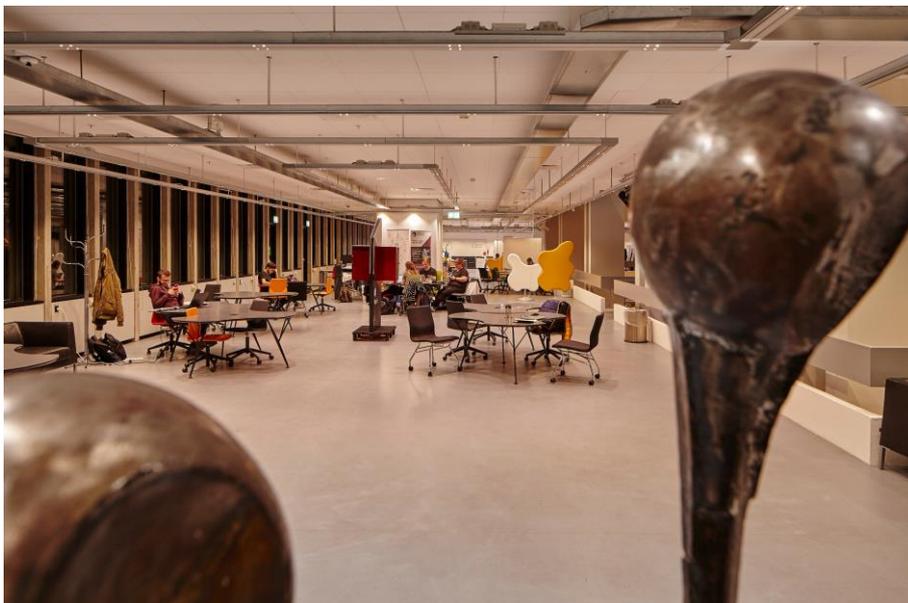
- We went to England and the award ceremony in the O2 Arena in London without great expectations, as we were the little guys among the largest manufacturers of the industry, Rolf H. Sprunk-Jansen, CEO and Co-founder of LED iBond tells.

But the low expectations were soon disproved when the LED iBond name was called from the stage. The small Danish company ended up being awarded the title “Highly Commended” in the category “Interior Luminaire of the Year – the year’s most ground-breaking interior light fitting”. The product that brought them into focus for this year’s award is the unique Tracy® solution, which is nothing less than a

revolution within lighting technology, as it can be used as a lighting system, but furthermore as infra-structure for IoT devices.

- We were surprised, but of course we did understand why we got the title “Highly Commended”, Rolf laughs and explains:

- Tracy® offers the combination of IoT, electric supply and lighting for up to 60 meters from a single electrical supply point. At the same time, the design measures only 6 mm in thickness which contributes to the functionality and the aesthetic expression of the product. In contrast to conventional LED lighting companies who utilize PCB, heatsink, housing and driver in conjunction with their LEDs, we



invented and patented a special “sandwich” system with a thickness of only 6 mm. Basically, it is about conducting power and communication in the exterior shell of the luminaire instead of using PCBs and wires.

- LED iBond’s technology is based on seven international patent families. One of the patents covers – a bit simplified – how we cool the LED chip, extending its lifespan considerably, adds Lars Frederiksen, CTO and Co-founder of LED iBond, and he elaborates:

- Many of our solutions have a larger aluminum surface area, which also dissipates the heat very well. Our



diodes may last much longer than 100.000hrs, which is rather unique in this business. It is all heat management, and while our diodes typically reach about 40C degrees, those of many of our colleagues reach 80 degrees. For every 10 degrees upwards, you halve the lifespan!

### **An exciting journey**

The journey from being a small startup company to now stand shoulder by shoulder with Europe’s largest manufacturers in London, has not been straightforward. The first patent was filed in 2000, when a financial crisis put the development of the innovative lighting systems on hold. But the financial crisis could not knock out the patents and the ideas and in 2014 LED iBond literally saw the light.

- Here we got our first investor, Bjarne Henning Jensen from SDTI, who is also chairman of the board in LED iBond today. Then followed a private investor before Vækstfonden (The Danish Growth Fund) came onboard. It is safe to say that we would not have come this far had they not seen the potential in our technology and the market opportunities, Rolf says.

Today, the company has 15 employees plus sales partners in Europe, South East Asia and the Middle East, and there is a great demand for the products, the know-how and the technology behind.

- In the short time which has passed since receiving our fine award in London, we have really felt an increasing demand. Especially from kitchen companies which were already following us with great interest after we started a

collaboration with the kitchen manufacturer, Nobia, who is behind 17 brands in Northern Europe, including HTH, Uno Form and Invita in Denmark. In Farum near Copenhagen we have just established a 22 meter long fully automatic production line dedicated to Tracy®, so we are well prepared for the future demand, Rolf explains.

Kitchen companies can benefit from Tracy’s® slim design and flexible adaptation which enables integration into all kinds of kitchens, new as well as existing.

### **Intelligent lighting for the modern library**

But it is not only the kitchen companies which demand the Tracy® solution. Several major library projects have benefited from this system, too:

- Actually, we did not really think about the libraries as a relevant market when we started, but this has changed, to say the least, Rolf smiles and elaborates:

- We got a big assignment at DTU (Technical University of Denmark), where they wanted a range of options for intelligent light control to be customized for individual user needs combining IoT with the latest technology in LED lighting, heating, ventilation and sound. Today, DTU Smart Library acts as a living laboratory, where students and scientists spend time and test new technologies. And the lighting is no exception. Here, the numerous traditional light fixtures have been replaced by 3.2 km Tracy®, which vary the color temperature as well as light intensity depending on user needs and time of the day.

- Yes, and now we are working on an order for the state-of-the-art library, Deichmanske Bibliotek, in Oslo. Here our lighting systems will be placed in three rows at 2.350 shelves where all lighting can be individually customized, Lars adds.

*“Today DTU Smart Library acts as a living laboratory, where students and scientists spend time and test new technologies”*

### **Easier maintenance**

Elevator lighting is another area where we have seen an overwhelming demand. The limited ceiling height and the heat release of the light sources must all be taken into account in addition to the client's desire for lower operating costs.



- Here we have hit the nail on the head in an international niche market that has faced some fundamental challenges. An interesting case to mention is the bed elevators of Rigshospitalet, where the well-being of the patients and the operating costs should be taken into account. Thus, the basic challenge in the installation was to ensure as little glare from the light as possible and to keep the lifts downtime to a minimum. Instead of replacing every light in the elevator, which would have necessitated the removal of the elevator ceiling anyhow, LED iBond designed a ceiling with integrated lighting. This meant that we could finish the installation within a few hours per elevator. A circular pattern of light was chosen to prevent the patients



from looking directly into the lamps, as they are placed lying in the middle of the elevator. Also, the energy efficiency is improved as the entire ceiling only consumes about 20W, whilst delivering an average of 130 lux on the floor. Compared to the hospital's previous solution this results in an energy saving of more than 85%, whilst also increasing the lux level by 30%, Rolf says.

### **Good prospects**

It may sound cliché but indeed the future seems bright for LED iBond. The Danish lighting system manufacturer has managed to cover some major gaps in the market and has developed some solutions which integrate technology, quality and flexibility into a range of compact lighting systems.

- We have solutions for many challenges. But being a small company in a large international market we have chosen to focus on few areas, so we really can make a difference and continue to develop. But we recognize that there is a great interest in using our technology outside our own core competences. For instance, we see great interest within food production and how our products can improve animal behavior and human health applying specific lighting technology. Simply put, there are so many possibilities

thanks to the basic technologies which are the building blocks of our company, so I see many good license agreements in a lot of different industries in the future. For instance, this could be about integrating LEDs with information technology into one single system, Lars concludes.