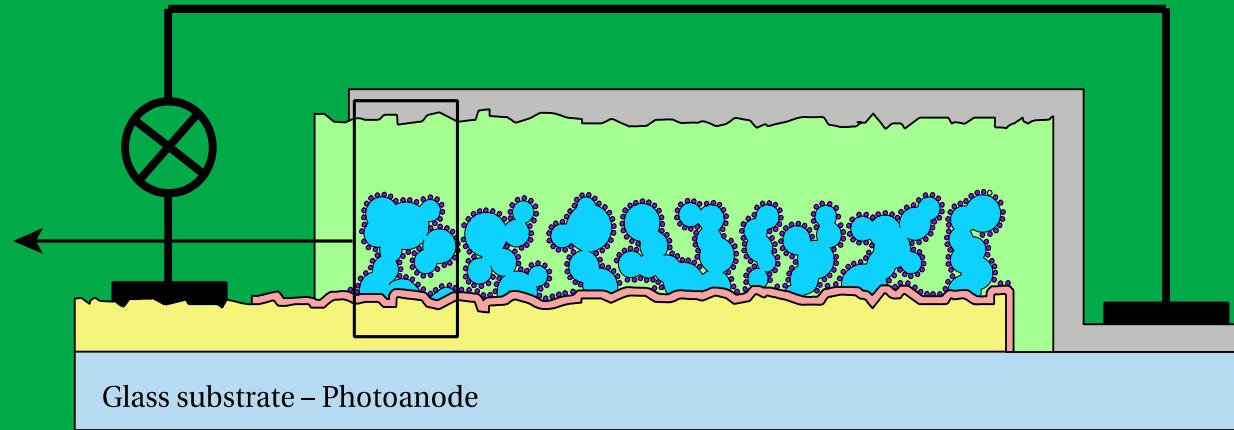
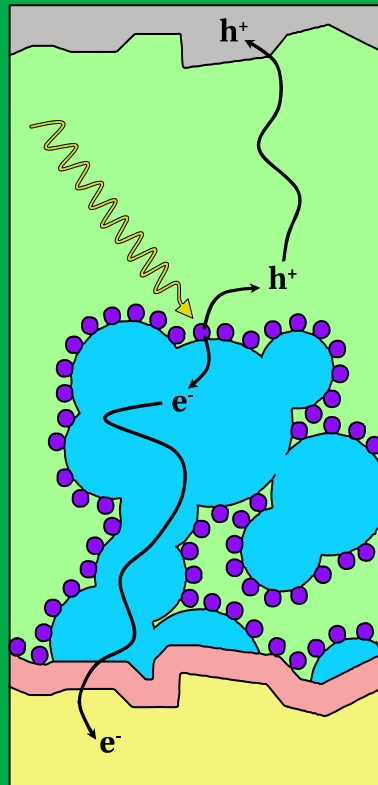


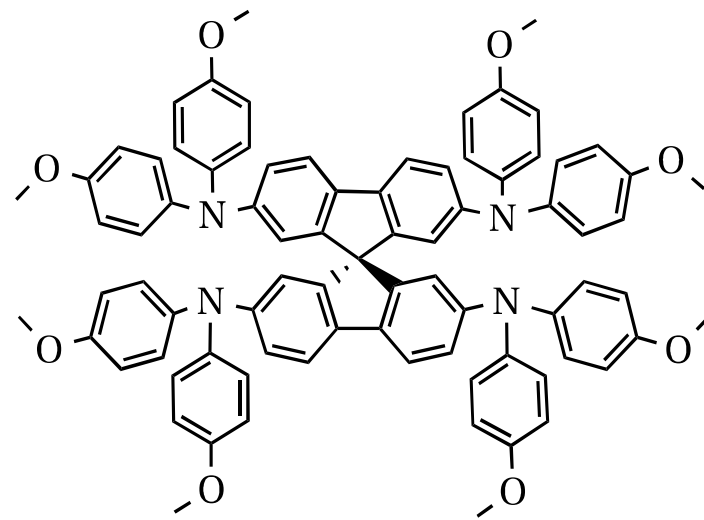
RICOH (Japan), yearly sales > 15 bio US\$

RICOH
imagine. change





- Sensitizer
- Metal oxide
- HTM
- Blocking layer
- TCO
- Back contact



spiro-MeOTAD

Most widely employed hole conductor is spiro-MeOTAD

Expanding Applications of Solid-state DSSCs

Now on sale !

RICOH
imagine. change.

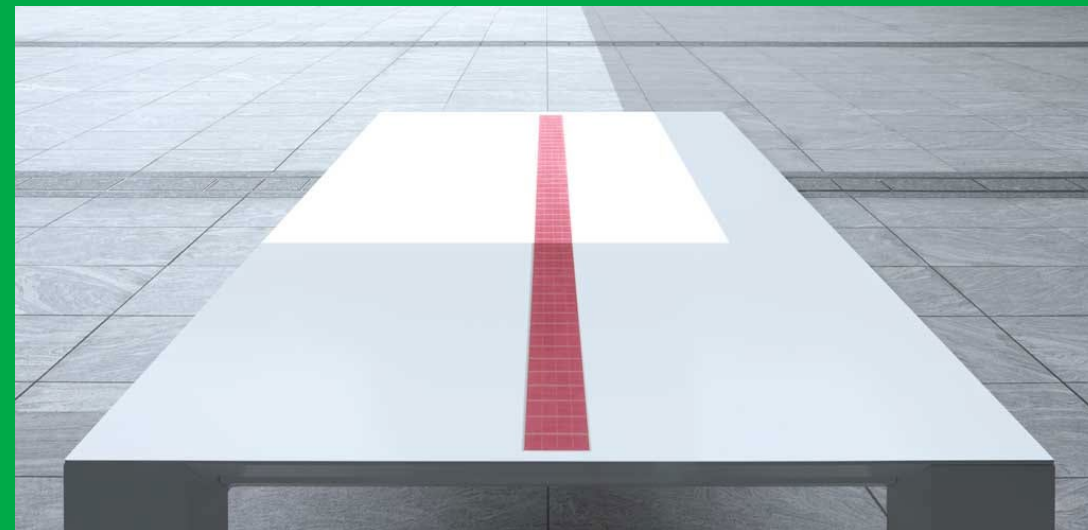
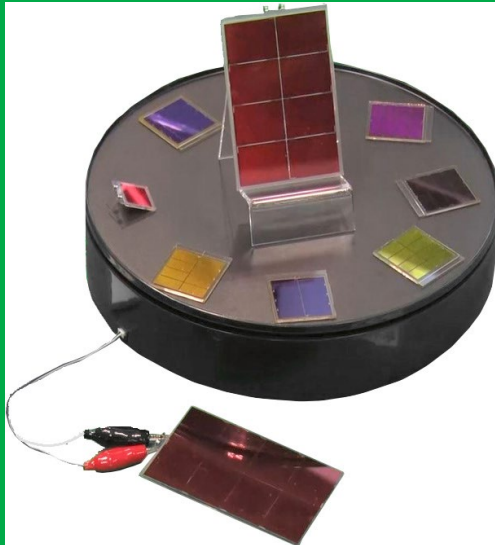
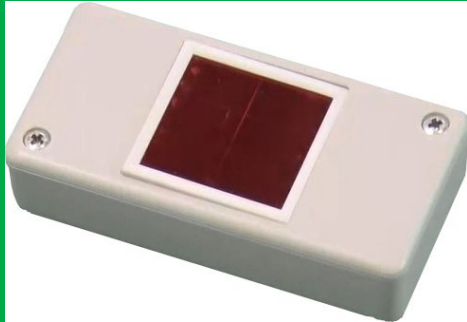


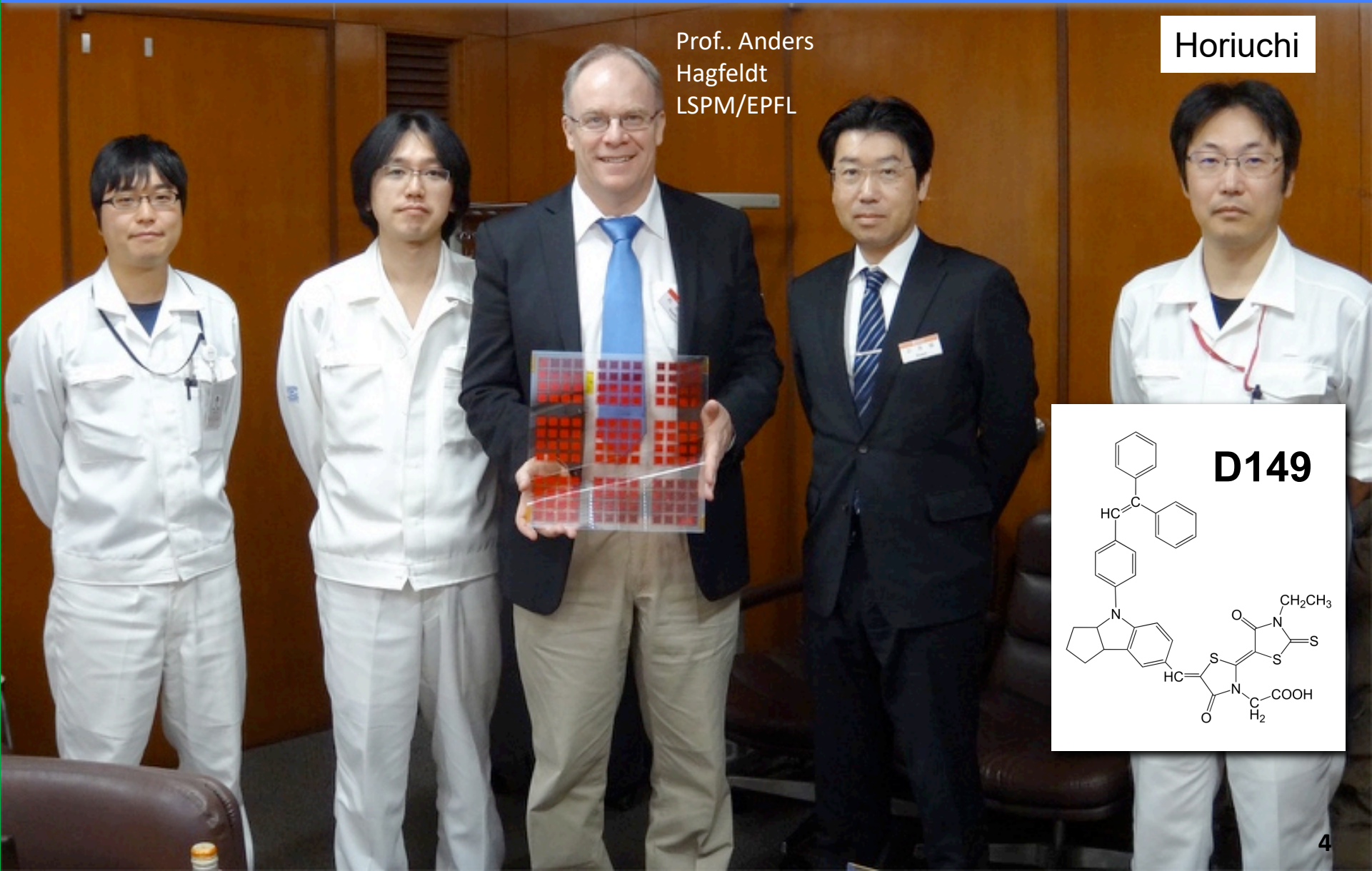
Fig.3 Sample implementation on a sensing device and a photovoltaic power supply

Fig.4 LOOP LINE T1 of TAISEI Co., Ltd.

https://www.ricoh.com/technology/tech/066_dssc

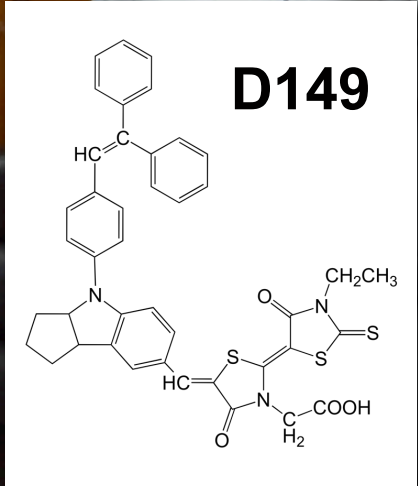
<https://www.loopline.jp/>

RICOH (Japan)



Prof. Anders
Hagfeldt
LSPM/EPFL

Horiuchi



New solid state DSC breakthrough announced by RICOH on May 13, 2021

RICOH beefs up production and sales of IoT products powered by solid state dye sensitized solar cells.



News Release

RICOH
imagine. change.

Launch of new RICOH EH DSSC modules with 20% increase in power generation

Independent power sources for IoT devices compatible with harsh environments
such as refrigeration warehouses

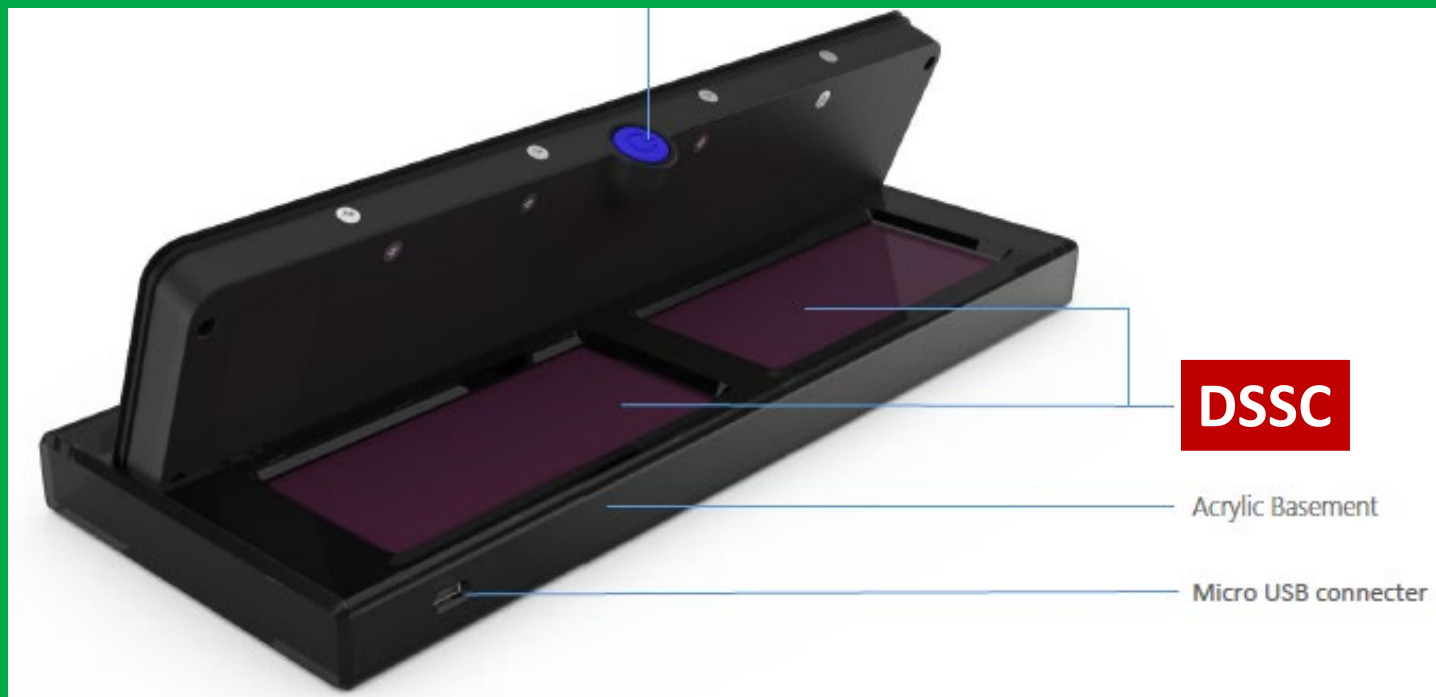
TOKYO, May 13, 2021 – Ricoh announced the launch of a new generation of RICOH EH DSSC Series, a solid-state dye-sensitized solar cell (DSSC) module that achieves high-power generation performance even under weak lighting conditions. The new module's maximum power output has improved by approximately 20% from the previous product. The latest modules can be used in low-temperature environments down to -30°C , perfect for a wide variety of settings, including lighted refrigerated warehouses and sensors for merchandising freezers. The new DSSC is offered as an independent power source for IoT sensor makers to use in devices for the manufacturing and distribution industries, smart offices and homes, and nursing and medical care facilities (storage of pharmaceuticals).

The new product line-up is available in three size formats. An evaluation set is also available containing three module sizes for product evaluation.



RICOH's new solid state DSC module

Battery-free display powered by dye sensitized solar cells





exeger

Exeger's 3'000 manufacturing line for HEFFA -type DSCs in Stockholm Sweden



MARCH 23, 2014 INAUGURATION OF THE NEW EXEGER DYE SENSITIZED SOLAR CELL FACTORY IN STOCKHOLM BY THE SWEDISH KING CARL XVI GUSTAF



ABB announced a new partnership with Sweden's Exeger Operations AB. The partnership will enable Exeger to enhance the production quality of their unique photovoltaic material in its Stockholm factory and develop automation solutions for Exeger's new, state-of-the-art, fully automated factory which will begin construction in the near future. 29-11-2019



Exeger products: energy autonomy for portable electronics via ambient light harvesting



DR Henrik Lindström
CTO



Endless music



Endless entertainment



exeger



Endless listening



Endless reading



**THANK YOU
GIOVANNI !**

**Exeger's 10th
anniversary
celebration.
Gala on
18.5.2019
in the City Hall
of Stockholm**



Michael Graetzel, Carole Graetzel and
Giovanni Fili, CEO of Exeger



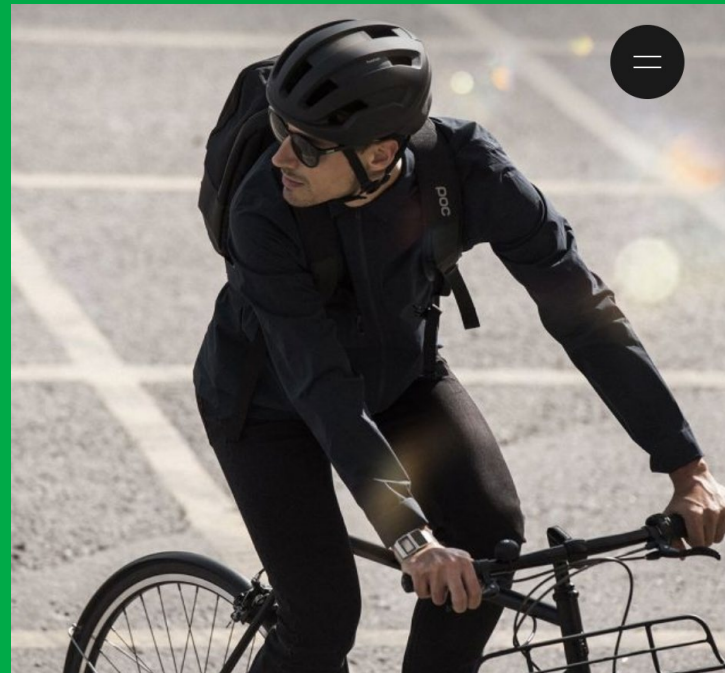
**THANK YOU
SOFTBANK !**

Latest News May 11 2021 : Exeger secures USD 38 million to start building new solar cell factory

Exeger launched two revolutionary products powered by Powerfoyle: a self-powered bicycle helmet together with POC (in February) and a self-charging wireless headphone with Urbanista (in April). The solar cell material converts all forms of light, indoor or outdoor, into electrical energy, which power the devices into which it is integrated.



Powerfoyle is seamlessly integrated into the Urbanista Los Angeles headphones, powering them with clean endless energy from the ambient light around you, both indoors and outdoors.



POC self-powered bicycle helmet with LED