



APOLLON SOLAR

Solar Energy & Hydrogen

EUPVSEC 2021 - *Solar Industry Forum*
Innovation quality and reliability

8 Sept. 2021
Tristan Carrère
Roland Einhaus



■ DEPUIS 2001 ■

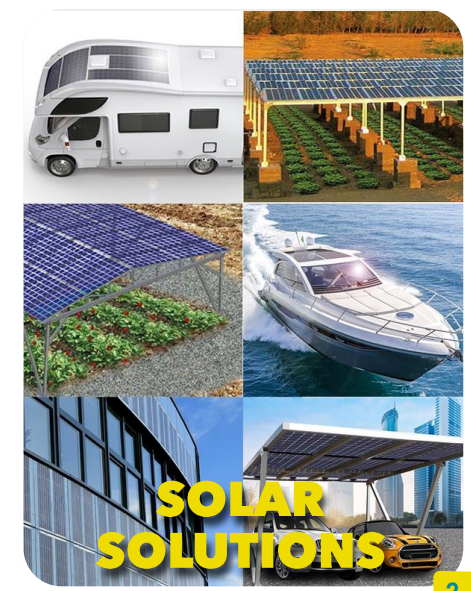
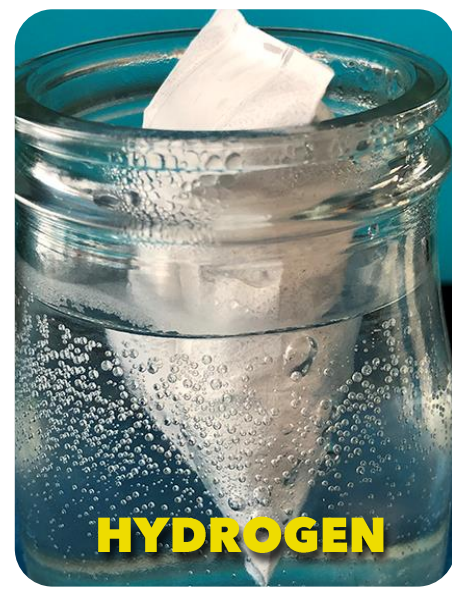
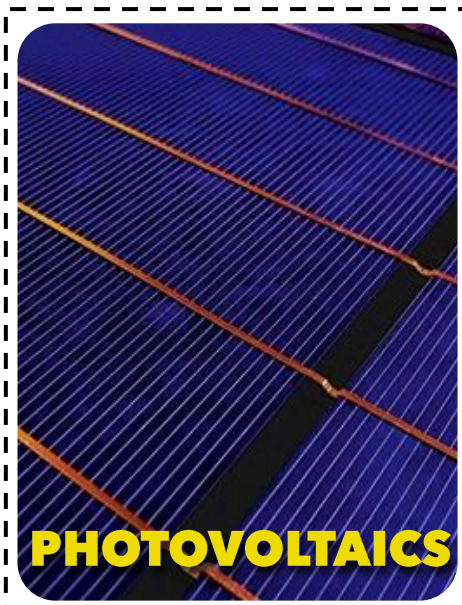
Family-owned company created in 2001 and based in Lyon, France

Capital 2,7M€

9 engineers

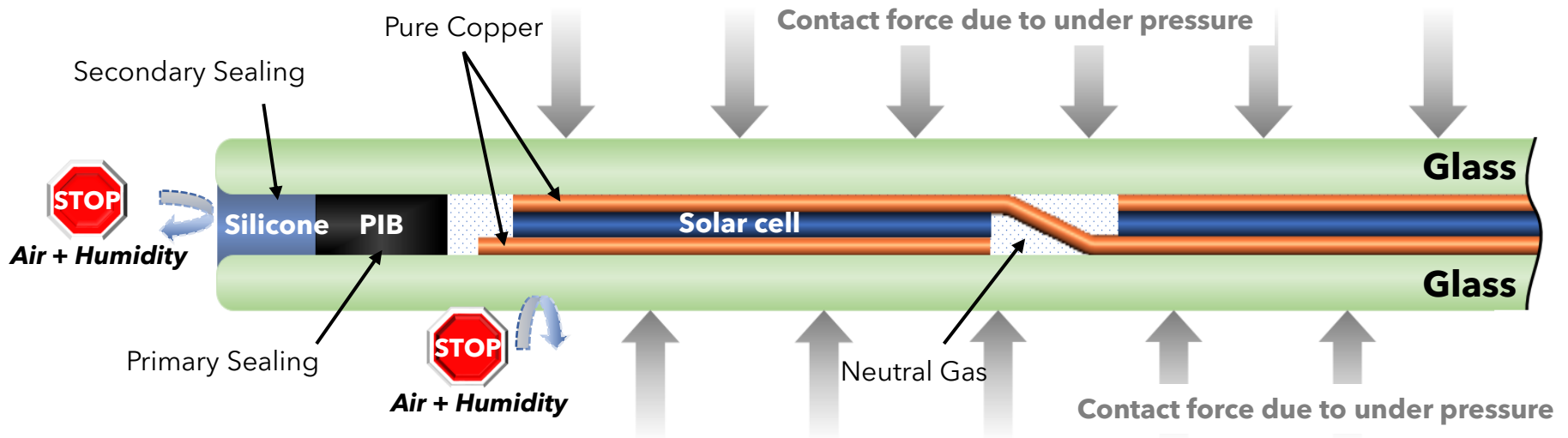
8 patents portfolio

Renewable energy technologies
Environmental values



N.I.C.E.TM module technology

Designed for ultra-durability



Unique features

- Encapsulant-free
- Solder-free
- High-quality double edge sealing
- Pure copper ribbons

Ultra-high durability

PV module degradation mechanisms

Mechanism	Linked to encapsulant?	Laminated modules	N.I.C.E.
PID	yes	yes	no
Encapsulant discoloring	yes	yes	no
Snail trails	yes	yes	no
Delamination	yes	yes	no
Backsheet failure	no	(yes)	no
Solder defects	(no)	yes	no
Cell/interconnect corrosion	(yes)	yes	less probable

D. Kray, 48th IEEE PVSC

Durability far beyond IEC certification testing

- ✓ ● 9000H+ Damp Heat
- ✓ ● 1000x Thermal Cycles
- ✓ ● 6X [200TC + 1000H DH under reverse bias]

N.I.C.E.TM module technology

Main advantages



Ultra high durability

- Glass-glass
- Solder-free
- Encapsulant-free
- High-quality double edge sealing

Eco-designed

- Less non-recyclable materials (- 90% organics, Tin-free)
Less toxic material (Lead-free)
- Most recyclable module of the market

High compatibility with next-GEN solar cells

- PERC, IBC,...
- Silicon Heterojunction (low T° process)
- Perovskites (Tight environment)

N.I.C.E.™ 2.0 demo production line

Status of N.I.C.E. technology production

- 50 MW demonstration line in-house, < 300 m² footprint
- Highly robotized and automatized
- Line ready ; Module certification ongoing (T4 - 2021)



 APOLLON
SOLAR

■ DEPUIS 2001 ■

carrere@apollonsolar.com
einhaus@apollonsolar.com

