



Introduction & Welcome

COST Action PEARL PV (CA16235) Conference **Enabling the PV Terawatt Transition**

14 – 16 March 2022, University of Twente, Enschede, the Netherlands

Angèle Reinders (prof.dr.), David Moser (dr.) and Wilfried van Sark (prof.dr.)

Dept. of Design, Production and Management, University of Twente, the Netherlands, email: a.h.m.e.reinders@utwente.nl

Energy Technology Group, Eindhoven University of Technology, the Netherlands

Introduction & Welcome

Welcome to the Final Conference of COST Action PEARL PV (CA16235)
by your Conference Organizers



Angele Reinders (prof.dr.)



Wilfried van Sark (prof.dr.)



David Moser (dr.)



Jeff Kettle (dr.)



Nicola Pearsall (prof.dr.)



Jonathan Leloux (dr.)



Bogdan Burduhos (ass.prof.dr.)

For regular updates, Zoom links and other information, keep an eye on the website:

[COST Action PEARL PV's Conference - Enabling the PV Terawatt Transition - PEARL PV \(pearlpv-cost.eu\)](https://pearlpv-cost.eu),

❖ Before we start, some important information

- ❖ Covid-19 measures on campus: though most regulations have been lifted we advise the audience to carefully keep some distance and regularly wash your hands. Do you have symptoms? Stay in and take a self-test, see also [Coronavirus measures in brief | Coronavirus COVID-19 | Government.nl](#) which is accessible by the Conference website.
- ❖ Register each day on the attendance list in order to receive reimbursement for long distance travel.
- ❖ This meeting will be recorded, by registering you give permission to being recorded.
- ❖ Lunches and dinner coupons can be purchased at the registration desk.
- ❖ For practical questions, please contact Ms. Saskia Groenendijk and Ms. Inge Dossantos-Smit at the registration desk or email: s.m.groenendijk@utwente.nl and i.dossantos-smith@utwente.nl

COST Action PEARL PV (CA16235) Conference Enabling the PV Terawatt Transition

This international conference takes place from 14 to 16 March 2022 at University of Twente in Enschede, the Netherlands.

It will present the results of COST Action PEARL PV (start in 2017, end in 2022) related to the main aims of this COST Action:

to improve the energy performance and reliability of photovoltaic (PV) solar energy systems in order to enable the PV terawatt transition.

This aim is embedded in research that is conducted in five Working Groups which host five sessions at this conference on resp.

(WG1) PV Monitoring,
(WG2) Reliability and Durability of PV,
(WG3) PV Simulation,
(WG4) PV in the Built Environment and
(WG5) PV in Grids.



COST Action PEARL PV (CA16235) Conference Enabling the PV Terawatt Transition

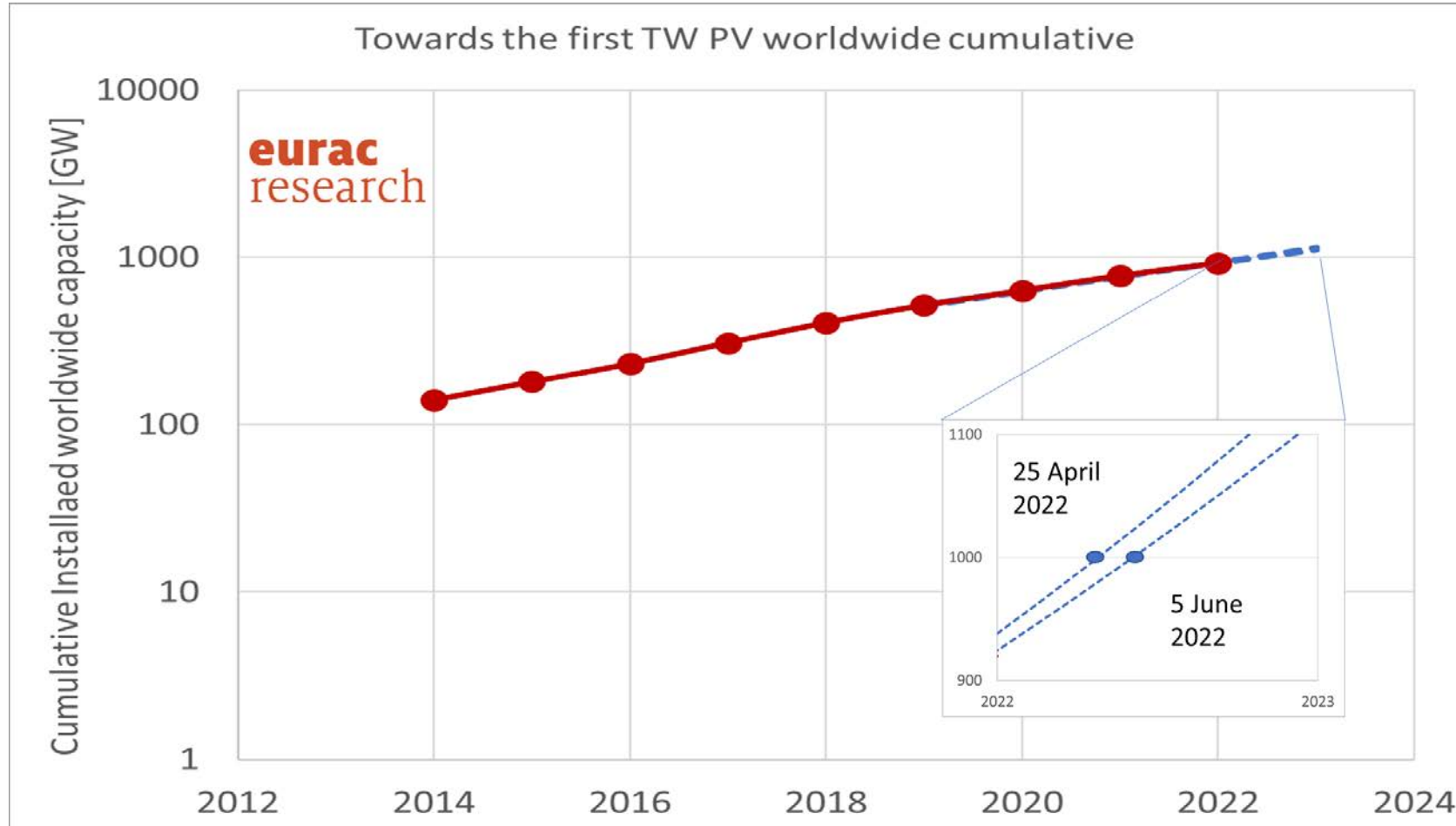


Figure by David Moser, Eurac
The trendline is calculated fitting the past 5 and 3 years respectively.
End 2021 data is still a guesstimate.

An overview of COST Action PEARL PV

- ❖ PEARL PV Network
- ❖ Growth of the Network
- ❖ COST Policy Implementation
- ❖ Results and Deliverables
- ❖ Follow-up of COST Action PEARL PV

Planning of this conference

Date	Monday 14 March 2022		Tuesday 15 March 2022		Wednesday 16 March 2022
9 h - 12:30 h Morning program	UParkHotel C2 Plenary Session		C2 WG2 Reliability & Durability of PV	C1 WG3 Simulation of PV	8 h Departure from 8 h – 16 h Excursion to HyET-Solar, Lightyear and Solar-Beat
14 h – 18 h Afternoon program	C2 WG 5 PV in Grids	C1 WG1 PV Monitoring	Waaier 2 WG4 PV in the Built Environment Plenary Closing Session		16 h Drop-off at Schiphol airport 18:30 h Return in Enschede

Registration desk till noon 14 March

Today's plenary session program

9:00h Opening ceremony

Prof. dr. **Angèle Reinders**, University of Twente, Enschede & Eindhoven University of Technology, Eindhoven, the Netherlands

Prof. dr. **Wilfried van Sark**, Utrecht University, Utrecht, the Netherlands

Dr. **David Moser**, EURAC, Bolzano, Italy

Dr. Gordana Kregar, COST Association, Brussels, Belgium

9:30h **Plenary Speaker 1: Dr. Teresa Barnes**, NREL, Denver, USA

Title: Predicting and Extending PV Module Lifetime



10:00h **Plenary Speaker 2: Prof. dr. Monica Lira-Cantu**, Catalan Institute of Nanoscience and Nanotechnology ICN2, Barcelona, Spain

Title: Perovskite Solar Cell Stability

10:30h Coffee & tea break

11:00h **Plenary Speaker 3: Prof. dr. Christophe Ballif**, Ecole Polytechnique

Fédérale de Lausanne (EPFL) and CSEM, Neuchâtel, Switzerland Title: Photovoltaics go fast: improved technologies and carbon footprint for a wider range of applications



11:30h **Plenary Speaker 4: Prof. dr. Jan Kleissl**, University of California, San Diego, USA

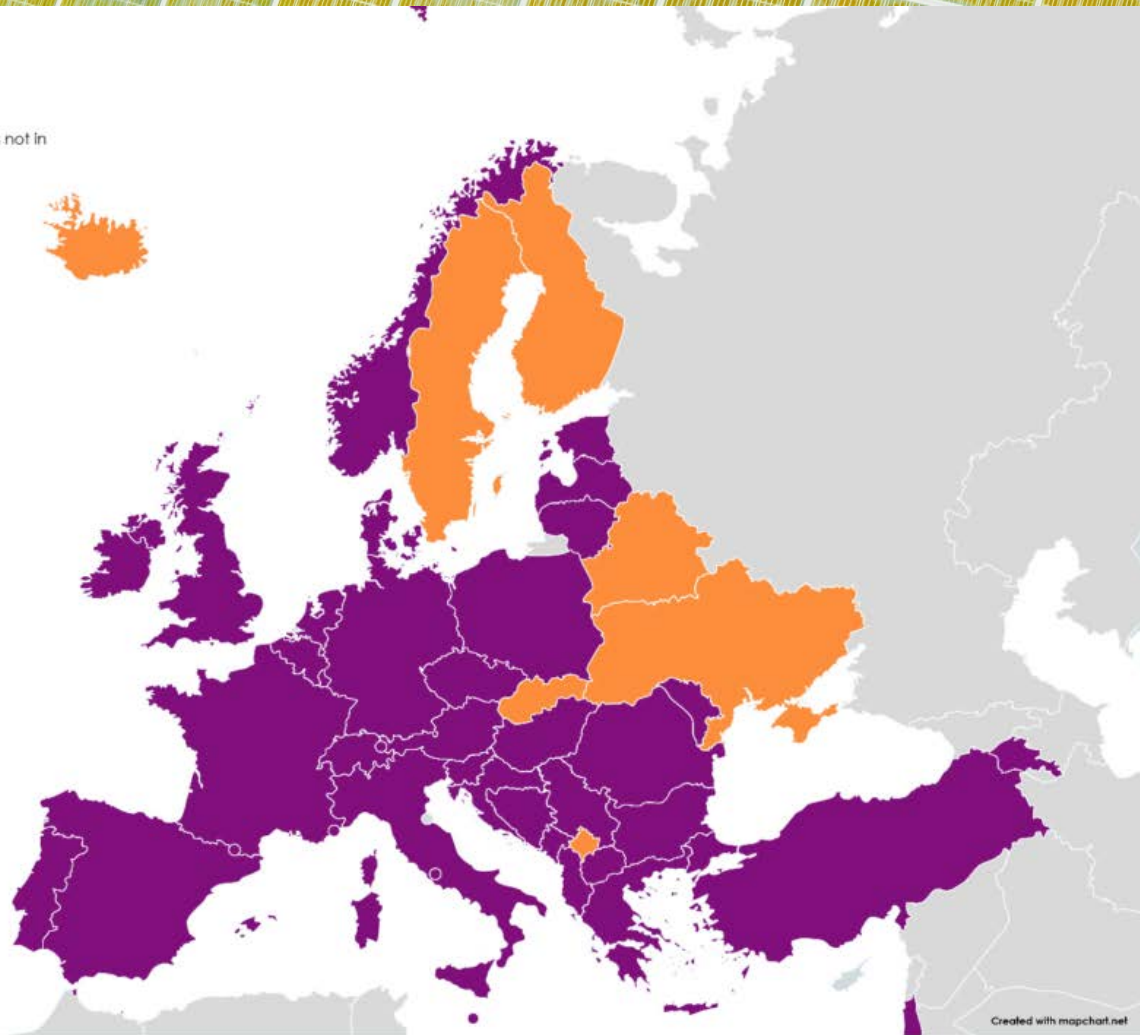
Title: Solar Forecasting

12:00h Q&A and panel discussion to be led by Prof. dr. Wilfried van Sark

12:30h Adjourn of this session & lunch

PEARL PV Network

■ PEARL PV Countries
■ Other Countries
■ COST Member Countries not in PEARL PV



38 European countries take part in COST Action PEARL PV by March 2022, indicated in purple.
Not shown on this map, but participating, are the USA and Australia.

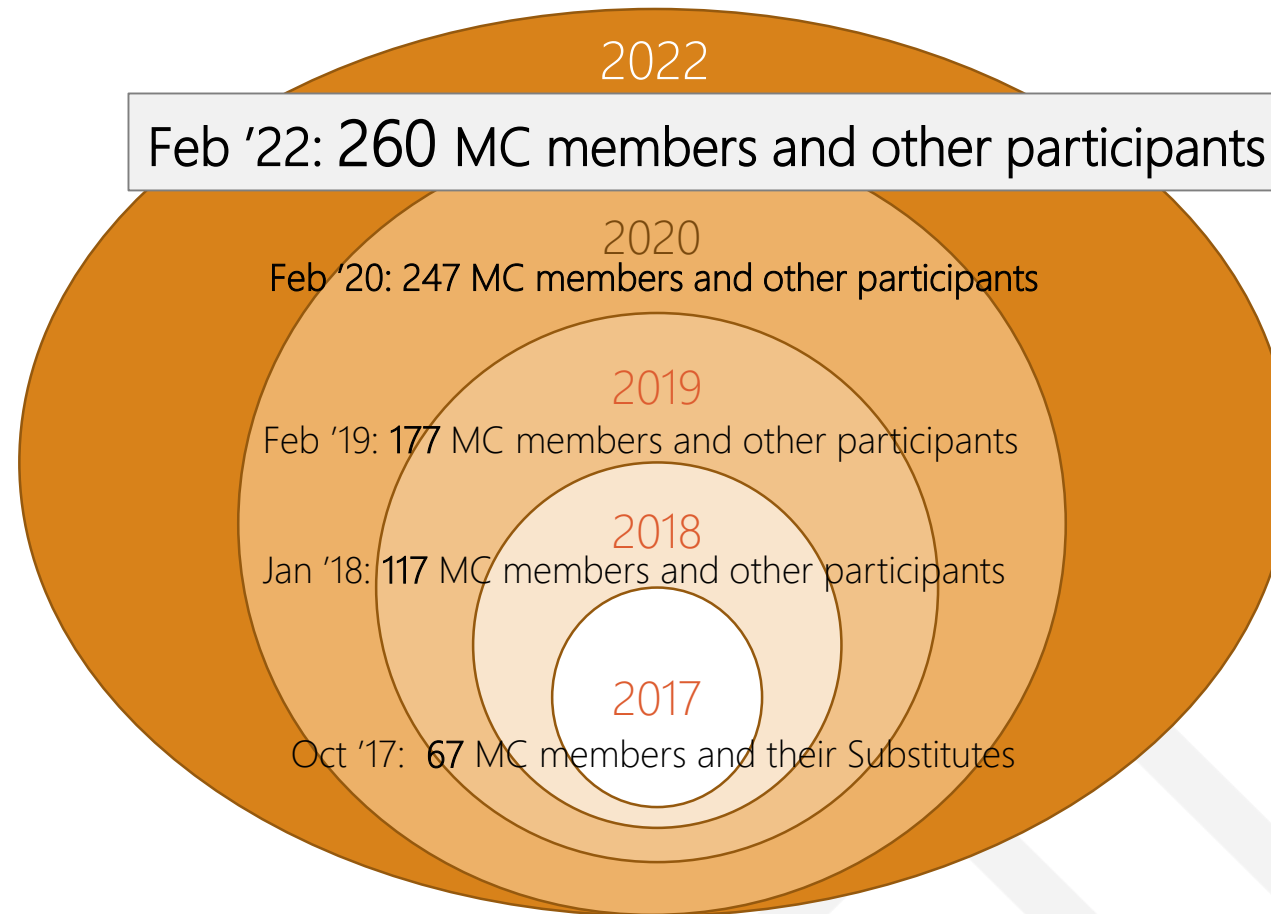
Activities in this network

- Bottom-up Research on PV systems
- Training Schools
- Seminars & Workshops,
- STSM grants & ITC conference grants

Aim to collaborate by

- Research
- Country reports
- Joint papers and other publications
- Joint research proposals
- Shared data bank

|| Growth of the network



COST Policy Implementation

GENDER BALANCE (Female participation, Target 30%) *COMPLETED!*

- ✓ Chair, Science Communication Manager, one Training School Manager and one Working Group Leader are female
- ✓ 30.3% women's participation in this Action

EARLY CAREER INVESTIGATORS (ECIs, Target 20% ECI) *COMPLETED!*

- ✓ Vice Chair and one Working Group Leader are ECIs
- ✓ 42 % ECI's participation in this Action
- ✓ Invited Speakers and dedicated ECI Workshops

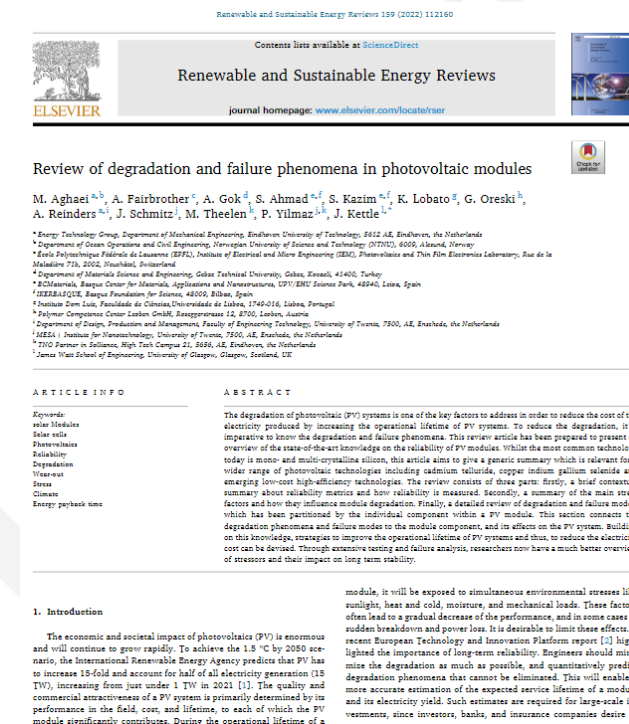
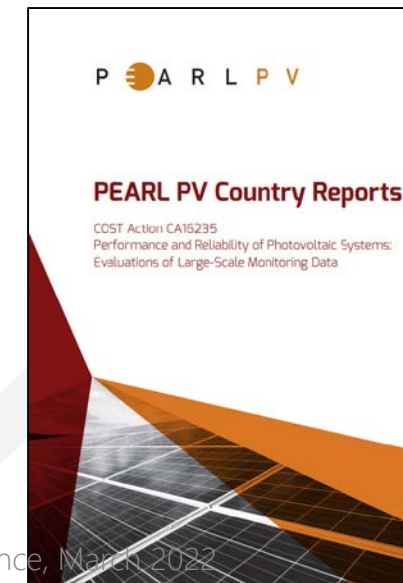
INCLUSIVENESS TARGET COUNTRIES (ITCs, Target 40%) *COMPLETED!*

- ✓ 18 countries are ITCs (of 37 PEARLPV countries), i.e. 53%
- ✓ Responsibilities at the Core Group -Two Core Group members are ITC colleagues
- ✓ Local Hosting of Meetings, Conferences, Training Schools and/or Seminars in Cyprus, Malta, Romania, Portugal

ITCs are the following COUNTRIES: Albania, Bosnia and Herzegovina, Bulgaria, Cyprus, Czech Republic, Estonia, Croatia, Hungary, Lithuania, Latvia, Luxembourg, Malta, Moldova, Montenegro, Poland, Portugal, Romania, Slovenia, Slovakia, Republic of North Macedonia, Republic of Serbia and Turkey

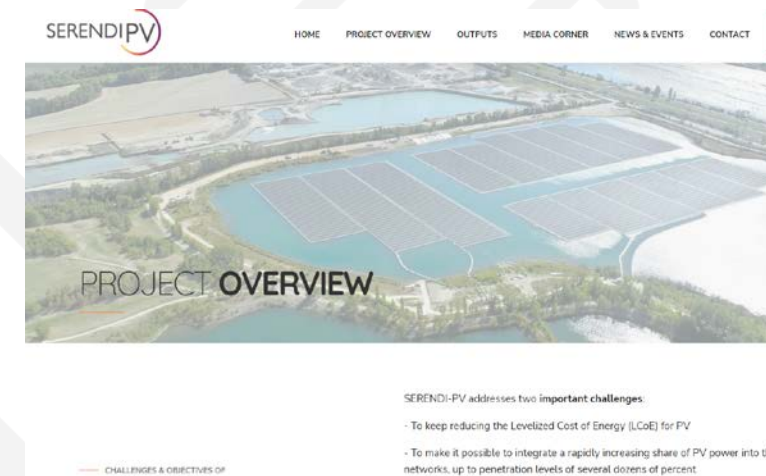
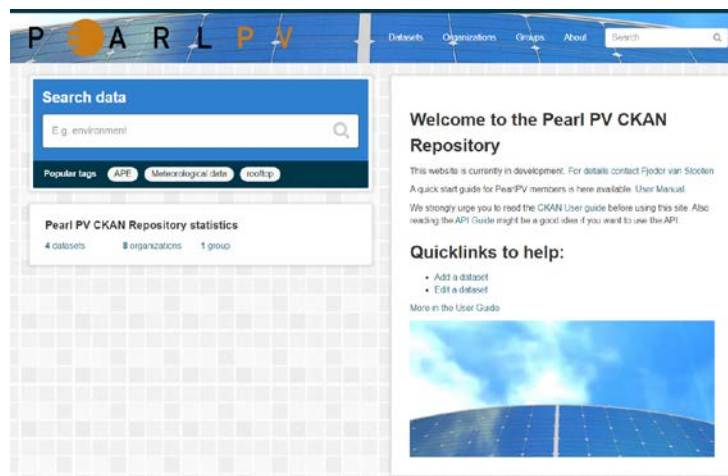
Results and deliverables

- Online Workshops: 8, Training Schools: 4, Workshops/Seminars: 4, MC-meetings: 5
- Specialty events: ITC Workshop, LSC-PV Workshop, EU PVSEC session on PV data
- Number of STSMs: 18
- Country Reports 2018 and 2020 (to be published in April '22)
- Journal publications > 25
- Visibility in media: Twitter, LinkedIn, Website



Follow-up of COST Action PEARL PV

- Shared CKAN data server for the next 20 years: <https://ckan.pearlpv-cost.eu/>
- Two Horizon2020 projects: [Trust PV](#) and [Serendi-PV](#)
- Other proposals in preparation: [Cost Innovator Grant](#) and [MSCA-DN](#)
- To be discussed: [continuation of the PEARL PV network in other format](#)
- [Please fill out the questionnaire at the registration desk!](#)



Today's plenary session program

9:00h **Opening ceremony**
Prof. dr. **Angèle Reinders**, University of Twente, Enschede & Eindhoven
University of Technology, Eindhoven, the Netherlands
Prof. dr. **Wilfried van Sark**, Utrecht University, Utrecht, the Netherlands
Dr. **David Moser**, EURAC, Bolzano, Italy
Dr. Gordana Kregar, COST Association, Brussels, Belgium

9:30h **Plenary Speaker 1: Dr. Teresa Barnes**, NREL, Denver, USA
Title: Predicting and Extending PV Module Lifetime

10:00h **Plenary Speaker 2: Prof. dr. Monica Lira-Cantu**, Catalan Institute of
Nanoscience and Nanotechnology ICN2, Barcelona, Spain
Title: Perovskite Solar Cell Stability

10:30h Coffee & tea break

11:00h **Plenary Speaker 3: Prof. dr. Christophe Ballif**, Ecole Polytechnique
Fédérale de Lausanne (EPFL) and CSEM, Neuchâtel, Switzerland
Title: Photovoltaics go fast: improved technologies and carbon footprint for a wider
range of applications

11:30h **Plenary Speaker 4: Prof. dr. Jan Kleissl**, University of California, San
Diego, USA
Title: Solar Forecasting

12:00h Q&A and panel discussion to be led by Prof. dr. Wilfried van Sark

12:30h Adjourn of this session & lunch





Enjoy this conference

**With big thanks and best regards from the entire
organizing committee**

Dr. David Moser, EURAC, Italy, Vice Chair of this Action

Dr. Jeff Kettle, University of Glasgow, UK, WG2 Leader on Reliability and Durability of PV

Prof.dr. Nicola Pearsall, Northumbria University, UK, WG3 Leader on PV Simulation

Dr. Bogdan Burduhos, Transylvania University of Brasov, Romania, WG4 Leader on PV in the Built Environment

Dr. Jonathan Leloux, Lucisun, Belgium and Spain, WG5 Leader on PV in Grids

Prof.dr. Wilfried van Sark, Utrecht University, the Netherlands, WG1 Leader on PV Monitoring

Prof.dr. Angèle Reinders, University of Twente and Eindhoven University of Technology, the Netherlands, Chair of this Action

COST Action PEARL PV (CA16235) Conference, March 2022