



FULLY CONNECTED VIRTUAL AND PHYSICAL
PEROVSKITE PHOTOVOLTAICS LAB

VIPERLAB Webinar

Customizing Co-Evaporated Perovskites: from Small Areas Solar Cells to Mini-module

Dr. Annalisa Bruno, ERI@N

INTRODUCTION

Paola Delli Veneri, ENEA head of Innovative Devices Laboratory

VIPERLAB GOALS

- *facilitated and coordinated transnational and virtual access to the best EU perovskite infrastructures and the use of advanced data mining approaches*
- *stimulate European academic and industrial researchers to work together on the research and development of the next generation of solar cell technology,*
- *accelerate the perovskite PV technology development in Europe.*

H2020 INFRAiA Project Coordinated by HZB

15 Partners

13 Physical infrastructures

4 Virtual infrastructures

Total Budget: 5,520,124.75 € (ca. 350 K€ / partner)

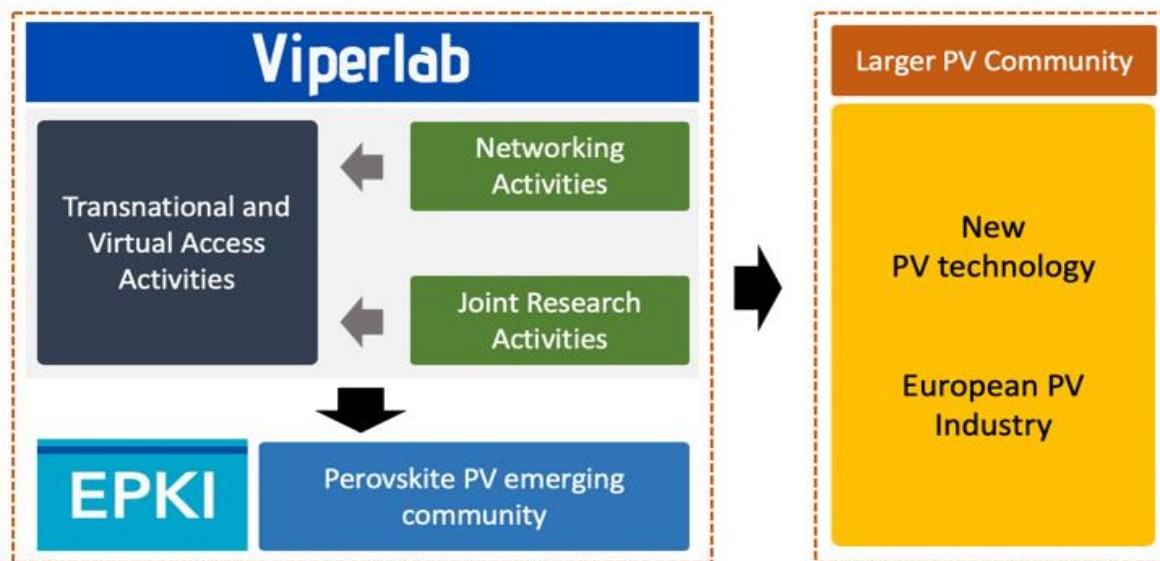
Starting date: 01.06.2021

Duration: 42 Months



Our concept and objectives

VIPERLAB



- Access to expertise and top EU infrastructures
- Networking and training Actions
- Develop infrastructure and knowledge-base

WP2 – TA1-User friendly management of Transnational and Virtual Access to dedicated infrastructures (Lead: HZB)

WP3 – VA1-Virtual access to database infrastructure, simulation and data analysis tools (Lead: FZJ)

WP4 – NA1-Harmonization and path towards standardization (Lead: AIT)

WP5 – NA2-Communication, Dissemination, Exchange and Training (Lead: ENEA)

WP6 – NA3-Community Building and Exploitation (Lead: IMEC)



WP7 – JRA1-Materials and Device innovation infrastructure
Digital design, multi level device modelling and new applications (Lead: EPFL)

WP8 – JRA2-Advanced device processing infrastructure *equipment, processes and standardization thereof*
(Lead: TNO)

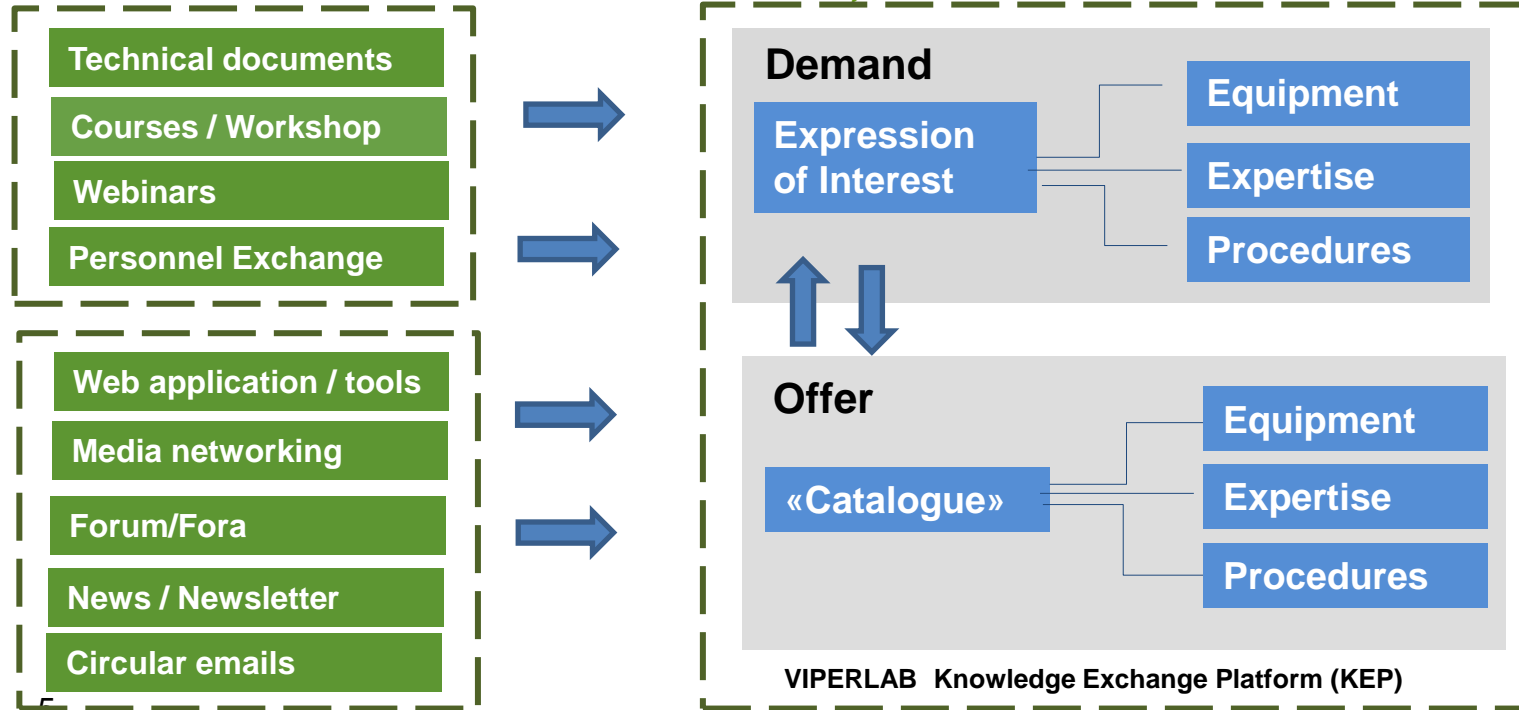
WP9 – JRA3-Characterization and standardization
stability, reliability, test protocols and standards (Lead: CEA)

WP10 – JRA4-Environmental, social and economic impact
LCOE, LCA, recycling and bankability (Lead: FRAUNHOFER)

ENEA Role: WP5 leader



VIPERLAB

TOOLS AND PROCEDURE FOR COMMUNICATION, DISSEMINATION, PERSONNEL AND KNOWLEDGE EXCHANGE, DATA REPOSITORY





ENEA-Tandem PSK/Si Lab




-  Lab-scale fabrication line for perovskite solar cells and perovskite/silicon tandem solar cells
-  Full chain from materials to device realization and characterization

Organisation : ENEA



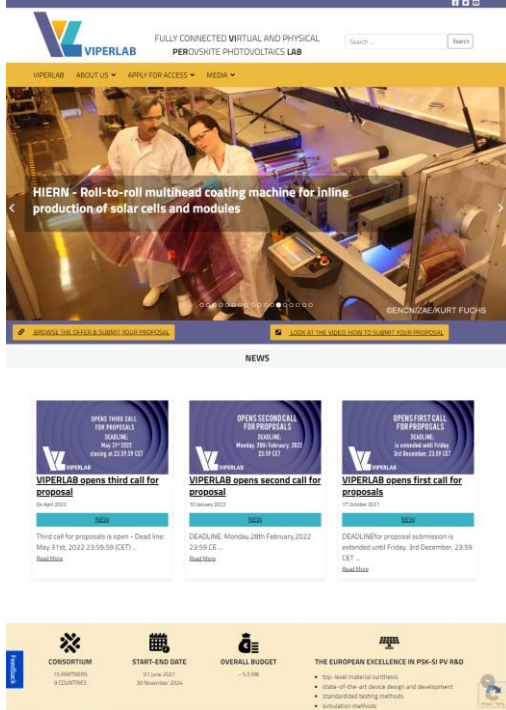
ENEA-CRESCO Computing Lab

ENEAGRID High performance computational infrastructure

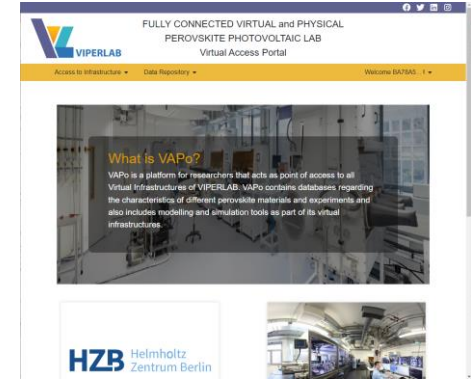
-  Distributed high performance and high throughput computing.
-  Parallel computing and numerical analysis.
-  Visualization and data mining.

Organisation : ENEA

Project web site (PWS)
<http://www.viperlab.eu/>



VIPERLAB Knowledge Exchange Platform (KEP)
<http://www.viperlab-kep.eu/>



VIPERLAB Virtual Access Portal (VAPO)
<http://www.viperlab-vapo.eu/>





VIPERLAB

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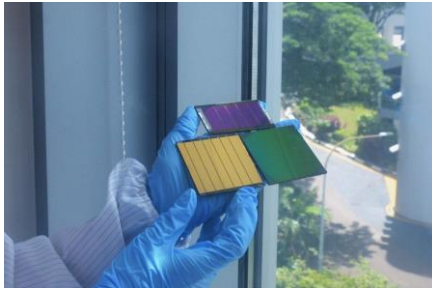


Customizing Co-Evaporated Perovskites: from Small Areas Solar Cells to Mini-module

Dr. Annalisa Bruno , ERI@N

29th June 2022 10:00-11:00 CEST on line*

*via VIPERLAB webinar platform



Metal-halide perovskites made a breakthrough in photovoltaic and light-emitting technologies in the last ten years. Dr. Annalisa Bruno's talk will show why thermal evaporation is a promising perovskite fabrication technique to bring this technology closer to production, by relying on excellent size scalability, promising stability, fine composition control, and surface adaptability. Perovskite fabricated by co-evaporation show remarkable structural robustness and impressive thermal stability. Dr. Bruno will present the results achieved by her team on semi-transparent PSCs and mini modules with a wide range of colors. Lastly she will further discuss how these results represent a significant step toward the commercialization of the perovskite technology



Dr. Annalisa Bruno, ERI@N

Principal Scientist at the Energy Research Institute at Nanyang Technological University (ERI@N)

She is leading the *Thermally Evaporated and Tandem Solar Cells* team and a tenured Senior Staff Scientist at Italian National Agency for New Technologies, Energy, and Sustainable Economic Development (ENEA).

Annalisa received her B.S., M.S., and Ph.D. Degrees in Physics from the University of Naples Federico II, Italy. After, she joined the Chemistry Department of Imperial College London as Post Doctoral Research Associate studying organic and hybrid materials for optoelectronic applications. In 2011 she joined ENEA and subsequently, in 2014 she also joined ERI@N.

Websites:

- <https://sites.google.com/site/annalisabrunosolar/home>
- <https://www.youtube.com/watch?v=kM0vgfz6hRk>
- <https://www.linkedin.com/in/dr-annalisa-bruno-2938a93/>