

HORIZON
2020

Roll-2-Roll and Photolithography post-processed with LAsEr digital technology for FLEXible photovoltaics and wearable displays

Risultati

Informazioni relative al progetto

RoLA-FLEX

ID dell'accordo di sovvenzione: 862474

[Sito web del progetto](#)

DOI

[10.3030/862474](https://doi.org/10.3030/862474)

Progetto chiuso

Data della firma CE

23 Marzo 2020

Data di avvio

1 Maggio 2020

Data di completamento

31 Ottobre 2023

Finanziato da

INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Advanced materials

Costo totale

€ 5 762 745,00

Contributo UE

€ 4 705 038,38

Coordinato da

ETHNICON METSOVION
POLYTECHNION

 Greece

CORDIS fornisce collegamenti ai risultati finali pubblici e alle pubblicazioni dei progetti ORIZZONTE.

I link ai risultati e alle pubblicazioni dei progetti del 7° PQ, così come i link ad alcuni tipi di risultati specifici come dataset e software, sono recuperati dinamicamente da [OpenAIRE](#).

Risultati finali

Websites, patent fillings, videos etc. (1)

[Project webpage](#)

A comprehensive website dedicated to the project and updated on a regular basis will be made available online

Documents, reports (1)

[Dissemination and communication strategy](#)

A working document outlining the dissemination strategy and tools to be used during the project

Pubblicazioni

Peer reviewed articles (22)

[Indium Tin Oxide-Free Inverted Organic Photovoltaics Using Laser-Induced Forward Transfer Silver Nanoparticle Embedded Metal Grids](#)

Autori: Sergey M. Pozov, Kostas Andritsos, Ioannis Theodorakos, Efthymios Georgiou, Apostolos Ioakeimidis, Ayala Kabla, Semyon Melamed, Fernando de la Vega, Ioanna Zergioti, and Stelios A. Choulis*

Pubblicato in: ACS Applied Electronic Materials, 2022, ISSN 2574-0962

Editore: American Chemical Society

DOI: 10.1021/acsaelm.2c00217

[Oligoethylene Glycol Side Chains Increase Charge Generation in Organic Semiconductor Nanoparticles for Enhanced Photocatalytic Hydrogen Evolution](#)

Autori: Jan Kosco, Soranyel Gonzalez-Carrero, Calvyn T. Howells, Weimin Zhang, Maximilian Moser, Rajendar Sheelamanthula, Lingyun Zhao, Benjamin Willner, Tania C. Hidalgo, Hendrik Faber, Balaji Purushothaman, Michael Sachs, Hyojung Cha, Rachid Sougrat, Thomas D. Anthopoulos, Sahika Inal, James R. Durrant, Iain McCulloch

Pubblicato in: Advanced Materials, 2021, ISSN 0935-9648

Editore: United Nations Industrial Development Organization

DOI: 10.1002/adma.202105007

[Correlating Charge-Transfer State Lifetimes with Material Energetics in Polymer:Non-Fullerene Acceptor Organic Solar Cells](#) 

Autori: Yifan Dong; Hyojung Cha; Helen L. Bristow; Jinho Lee; Aditi Kumar; Pabitra Shakya Tuladhar; Iain McCulloch; Artem A. Bakulin; James R. Durrant

Pubblicato in: Journal of the American Chemical Society, Numero 1, 2021, ISSN 0002-7863

Editore: American Chemical Society

DOI: 10.1021/jacs.1c00584

[The effect of side chain engineering on conjugated polymers in organic electrochemical transistors for bioelectronic applications](#) 

Autori: Yifei He; Nadzeya A. Kukhta; Adam Marks; Christine K. Luscombe

Pubblicato in: Journal of Materials Chemistry A, Numero 1, 2022, ISSN 2050-7488

Editore: Royal Society of Chemistry

DOI: 10.1039/d1tc05229b

[Non-Embedded Silver Nanowires/Antimony-Doped Tin Oxide/Polyethylenimine Transparent Electrode for Non-Fullerene Acceptor ITO-Free Inverted Organic Photovoltaics](#) 

Autori: Efthymios Georgiou; Apostolos Ioakeimidis; Ioanna Antoniou; Ioannis T. Papadas; Alina Hauser; Michael Rossier; Flavio Linardi; Stelios A. Choulis

Pubblicato in: ACS Applied Electronic Materials, 2023, ISSN 2637-6113

Editore: American Chemical Society

DOI: 10.1021/acsaelm.2c01187

[Molecular Design Strategies toward Improvement of Charge Injection and Ionic Conduction in Organic Mixed Ionic–Electronic Conductors for Organic Electrochemical Transistors](#) 

Autori: Nadzeya A. Kukhta; Adam Marks; Christine K. Luscombe

Pubblicato in: Chemical Reviews, Numero 1, 2022, ISSN 0009-2665

Editore: American Chemical Society

DOI: 10.1021/acs.chemrev.1c00266

[Conformal laser printing and laser sintering of Ag nanoparticle inks: a digital approach for the additive manufacturing of micro-conductive patterns on patterned exible substrates](#) 

Autori: Kostas Andritsos, Ioannis Theodorakos, Filimon Zacharatos, Ayala Kabla, Semyon Melamed, Fernando de la Vega, Yoann Porte, Patrick Too, Ioanna Zergioti

Pubblicato in: Virtual and Physical Prototyping, 2022, ISSN 1745-2759

Editore: Taylor & Francis

DOI: 10.1080/17452759.2022.2138462

[Digital laser printing and sintering of silver nanoparticle inks for the additive manufacturing of micro-conductive patterns on non-planar patterned flexible substrates](#) 

Autori: Kostas Andritsos, Ioannis Theodorakos, Filimon Zacharatos, Ayala Kabla, Semyon Melamed, Fernando de la Vega, Yoann Porte, Patrick Too, Ioanna Zergioti

Pubblicato in: Materials Today, 2022, ISSN 2214-7853

Editore: Elsevier

DOI: 10.1016/j.matpr.2022.10.248

[A 19% efficient and stable organic photovoltaic device enabled by a guest nonfullerene acceptor with fibril-like morphology](#)

Autori: Hu Chen; Sang Young Jeong; Junfu Tian; Yadong Zhang; Dipti R. Naphade; Maryam Alsufyani; Weimin Zhang; Sophie Griggs; Hanlin Hu; Stephen Barlow; Han Young Woo; Seth R Marder; Thomas D. Anthopoulos; Iain McCulloch; Yuanbao Lin

Pubblicato in: Energy & Environmental Science, Numero 6, 2023, ISSN 1001-0742

Editore: IOS Press

DOI: 10.1039/d2ee03483b

[Low-Defect, High Molecular Weight Indacenodithiophene \(IDT\) Polymers Via a C–H Activation: Evaluation of a Simpler and Greener Approach to Organic Electronic Materials](#)

Autori: James F. Ponder Jr, Hu Chen, Alexander M. T. Luci, Stefania Moro, Marco Turano, Archie L. Hobson, Graham S. Collier, Luís M. A. Perdigao, Maximilian Moser, Weimin Zhang, Giovanni Costantini, John R. Reynolds, and Iain McCulloch

Pubblicato in: ACS Materials Letters, 2021, ISSN 2639-4979

Editore: ACS Publications

DOI: 10.1021/acsmaterialslett.1c00478

[Controlling Electrochemically Induced Volume Changes: from Theory to Devices](#)

Autori: Maximilian Moser, Johannes Gladisch, Sarbani Ghosh, Tania Cecilia Hidalgo, James Ponder Jr., Rajendar Sheelamanthula, Quentin Thiburce, Nicola Gasparini, Andrew Wadsworth, Alberto Salleo, Sahika Inal, Magnus Berggren, Igor Zozoulenko, Eleni Stavrinidou, Iain McCulloch

Pubblicato in: Advanced Functional Materials, 2021, ISSN 1616-3028

Editore: Wiley

DOI: 10.1002/adfm.202100723

[A single n-type semiconducting polymer-based photo-electrochemical transistor](#)

Autori: Victor Druet; David Ohayon; Christopher E. Petoukhoff; Yizhou Zhong; Nisreen Alshehri; Anil Koklu; Prem D. Nayak; Luca Salvigni; Latifah Almulla; Jokubas Surgailis; Sophie Griggs; Iain McCulloch; Frédéric Laquai; Sahika Inal

Pubblicato in: Nature Communications, Numero 8, 2023, ISSN 2041-1723

Editore: Nature Publishing Group

DOI: 10.1038/s41467-023-41313-7

[Regiochemistry-Driven Organic Electrochemical Transistor Performance Enhancement in Ethylene Glycol-Functionalized Polythiophenes](#)

Autori: Rawad K. Hallani, Bryan D. Paulsen, Anthony J. Petty II, Rajendar Sheelamanthula, Maximilian Moser, Karl J. Thorley, Wonil Sohn, Reem B. Rashid, Achilleas Savva, Stefania Moro, Joseph P. Parker, Oscar Drury, Maryam Alsufyani, Marios Neophytou, Jan Kosco, Sahika Inal, Giovanni Costantini, Jonathan Rivnay, and Iain McCulloch

Pubblicato in: Journal of the American Chemical Society, 2021, ISSN 0002-7863

Editore: American Chemical Society

DOI: 10.1021/jacs.1c03516

[Propylene and butylene glycol: new alternatives to ethylene glycol in conjugated polymers for bioelectronic applications](#)

Autori: Maximilian Moser; Yazhou Wang; Tania Cecilia Hidalgo; Hailiang Liao; Yaping Yu; Junxin Chen; Jiayao Duan; Floriana Moruzzi; Sophie Griggs; Adam Marks; Nicola Gasparini; Andrew Wadsworth; Sahika Inal; Iain McCulloch; Wan Yue

Pubblicato in: Materials Horizon, Numero 1, 2022, ISSN 2051-6347

Editore: Royal Society of Chemistry

DOI: 10.1039/d1mh01889b

[Non-fullerene acceptor photostability and its impact on organic solar cell lifetime](#)

Autori: Andrew J Clarke, Joel Luke, Rico Meitzner, Jiaying Wu, Yuming Wang, Harrison KH Lee, Emily M Speller, Helen Bristow, Hyojung Cha, Michael J Newman, Katherine Hooper, Alex Evans, Feng Gao, Harald Hoppe, Iain McCulloch, Ulrich S Schubert, Trystan M Watson, James R Durrant, Wing C Tsoi, Ji-Seon Kim, Zhe Li

Pubblicato in: Cell Reports Physical Science, 2021, ISSN 2666-3864

Editore: Elsevier

DOI: 10.1016/j.xcrp.2021.100498

[Impact of Side-Chain Hydrophilicity on Packing, Swelling, and Ion Interactions in Oxy-Bithiophene Semiconductors](#)

Autori: Nicholas Siemons; Drew Pearce; Camila Cendra; Hang Yu; Sachetan M. Tuladhar; Rawad K. Hallani; Rajendar Sheelamanthula; Garrett S. LeCroy; Lucas Siemons; Andrew J. P. White; Iain McCulloch; Alberto Salleo; Jarvist M. Frost; Alexander Giovannitti; Jenny Nelson

Pubblicato in: Advanced Materials, Numero 9, 2022, ISSN 0935-9648

Editore: United Nations Industrial Development Organization

DOI: 10.1002/adma.202204258

[Lactone Backbone Density in Rigid Electron-Deficient Semiconducting Polymers Enabling High n-type Organic Thermoelectric Performance](#)

Autori: Maryam Alsufyani, Marc-Antoine Stoeckel, Xingxing Chen, Karl Thorely, Rawad K Hallani, Yuttapoom Puttisong, Xudong Ji, Dilara Meli, Bryan D Paulsen, Joseph Strzalka, Khrystyna Regeta, Craig Combe, Hu Chen, Junfu Tian, Jonathan Rivnay, Simone Fabiano, Iain McCulloch

Pubblicato in: Angewandte Chemie, 2021, ISSN 0044-8249

Editore: Wiley-VCH

DOI: 10.1002/ange.202113078

[Air-stable bismuth sulfobromide \(BiSBr\) visible-light absorbers: optoelectronic properties and potential for energy harvesting](#) 

Autori: Xiaoyu Guo; Yi-Teng Huang; Hugh Lohan; Junzhi Ye; Yuanbao Lin; Juhwan Lim; Nicolas Gauriot; Szymon J. Zelewski; Daniel Darvill; Huimin Zhu; Akshay Rao; Iain McCulloch; Robert L. Z. Hoyer

Pubblicato in: Journal of Materials Chemistry A, Numero 10, 2023, ISSN 2050-7488

Editore: Royal Society of Chemistry

DOI: 10.1039/d3ta04491b

[Reversible Electrochemical Charging of n-Type Conjugated Polymer Electrodes in Aqueous Electrolytes.](#) 

Autori: Anna A. Szumska; Iuliana P. Maria; Iuliana P. Maria; Lucas Q. Flagg; Achilleas Savva; Jokubas Surgailis; Bryan D. Paulsen; Davide Moia; Xingxing Chen; Sophie Griggs; Sophie Griggs; J. Tyler Mefford; Reem B. Rashid; Adam Marks; Adam Marks; Sahika Inal; David S. Ginger; Alexander Giovannitti; Alexander Giovannitti; Jenny Nelson

Pubblicato in: Journal of the American Chemical Society, Numero 2, 2021, ISSN 0002-7863

Editore: American Chemical Society

DOI: 10.1021/jacs.1c06713

[Ternary organic photodetectors based on pseudobinaries nonfullerene-based acceptors](#) 

Autori: Tianyi Zhang, Maximilian Moser, Alberto D Scaccabarozzi, Helen Bristow, Polina Jacoutot, Andrew Wadsworth, Thomas D Anthopoulos, Iain McCulloch and Nicola Gasparini

Pubblicato in: Journal of Physics: Materials, 2021, ISSN 2515-7639

Editore: IOP Science

DOI: 10.1088/2515-7639/ac0c0a

[The effect of residual palladium on the performance of organic electrochemical transistors](#) 

Autori: Sophie Griggs; Adam Marks; Dilara Meli; Gonzague Rebetez; Olivier Bardagot; Bryan D. Paulsen; Hu Chen; Karrie Weaver; Mohamad I. Nugraha; Emily A. Schafer; Joshua Tropp; Catherine M. Aitchison; Thomas D. Anthopoulos; Natalie Banerji; Jonathan Rivnay; Iain McCulloch

Pubblicato in: Nature Communications, Numero 3, 2022, ISSN 2041-1723

Editore: Nature Publishing Group
DOI: 10.1038/s41467-022-35573-y

[High-performance non-fullerene acceptor inverted organic photovoltaics incorporating solution processed doped metal oxide hole selective contact](#) 

Autori: Apostolos Ioakeimidis; Alina Hauser; Michael Rossier; Flavio Linardi; Stelios A. Choulis

Pubblicato in: Applied Physics Letters, 2022, ISSN 0003-6951

Editore: American Institute of Physics

DOI: 10.1063/5.0091671

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