

Electronic Supporting Information (ESI)

On the stability of a variety of organic photovoltaic devices by IPCE and *in-situ* IPCE analyses - The ISOS-3 inter-laboratory collaboration.

Gerardo Teran-Escobar^a, David M. Tanenbaum^{b,c}, Eszter Voroshazi^d, Martin Hermenau^e, Kion Norrman^b, Matthew T. Lloyd^f, Yulia Galagan^g, Birger Zimmermann^h, Markus Hösel^b, Henrik F. Dam^b, Mikkel Jørgensen^b, Suren Gevorgyan^b, Suleyman Kudret^j, Wouter Maesⁱ, Laurence Lutsenⁱ, Dirk Vanderzande^j, Uli Würfel^h, Ronn Andriessen^g, Roland Rösch^k, Harald Hoppe^k, Agnès Rivatonⁿ, Gülşah Y. Uzunoğlu^l, David Germack^m, Birgitta Andreassen^b, Morten V. Madsen^b, Eva Bundgaard^b and Frederik C. Krebs^b, Monica Lira-Cantu^{a*}

a. Centre d'Investigació en Nanociència i Nanotecnologia (CIN2, CSIC), Laboratory of Nanostructured Materials for Photovoltaic Energy, ETSE, Campus UAB, Edifici Q, 2nd floor. Bellaterra, Barcelona (Spain).
monica.lira@cin2.es

b. Department of Energy Conversion and Storage, Technical University of Denmark, Frederiksborgvej 399, DK-4000, Roskilde, Denmark

c. Department of Physics and Astronomy, Pomona College, Claremont, CA, 91711, USA

d. IMEC, Kapeldreef 75, 3000 Leuven, Belgium and Katholieke Universiteit Leuven, ESAT, Kasteelpark Arenberg 10, 3000, Leuven, Belgium

e. Arbeitsgruppe Organische Solarzellen (OSOL), Institut für Angewandte Photophysik, Technische Universität Dresden, 01062, Dresden, Germany.

f. National Renewable Energy Laboratory, Golden, CO, 80401, USA

g. Holst Centre, High Tech Campus 31, 5656 AE Eindhoven, The Netherlands

h. Fraunhofer Institute for Solar Energy Systems ISE, Heidenhofstrasse 2, D-79110, Freiburg, Germany

i. IMEC, IMOMEC associated laboratory, Campus University of Hasselt, Wetenschapspark 1, B-3590, Diepenbeek, Belgium

j. Hasselt University, Campus, Agoralaan 1, Building D, WET/OBPC, B-3590 Diepenbeek, Belgium
Floor, E-08193, Bellaterra (Barcelona), Spain

k. Institute of Physics, Ilmenau University of Technology, Weimarer Str. 32, 98693, Ilmenau, Germany

l. TÜBİTAK National Metrology Institute (UME), Photonic and Electronic Sensors Laboratory, P.O. Box 54, 41470, Gebze, Kocaeli, TURKEY

m. Condensed Matter Physics, Brookhaven National Lab, Building 510B Upton, NY, 11973

n. Clermont Université, Université Blaise Pascal, Laboratoire de Photochimie, Moléculaire et Macromoléculaire (LPMM), BP10448 Clermont-Ferrand, France and CNRS, UMR6505, LPMM, F-63177, Aubière, France

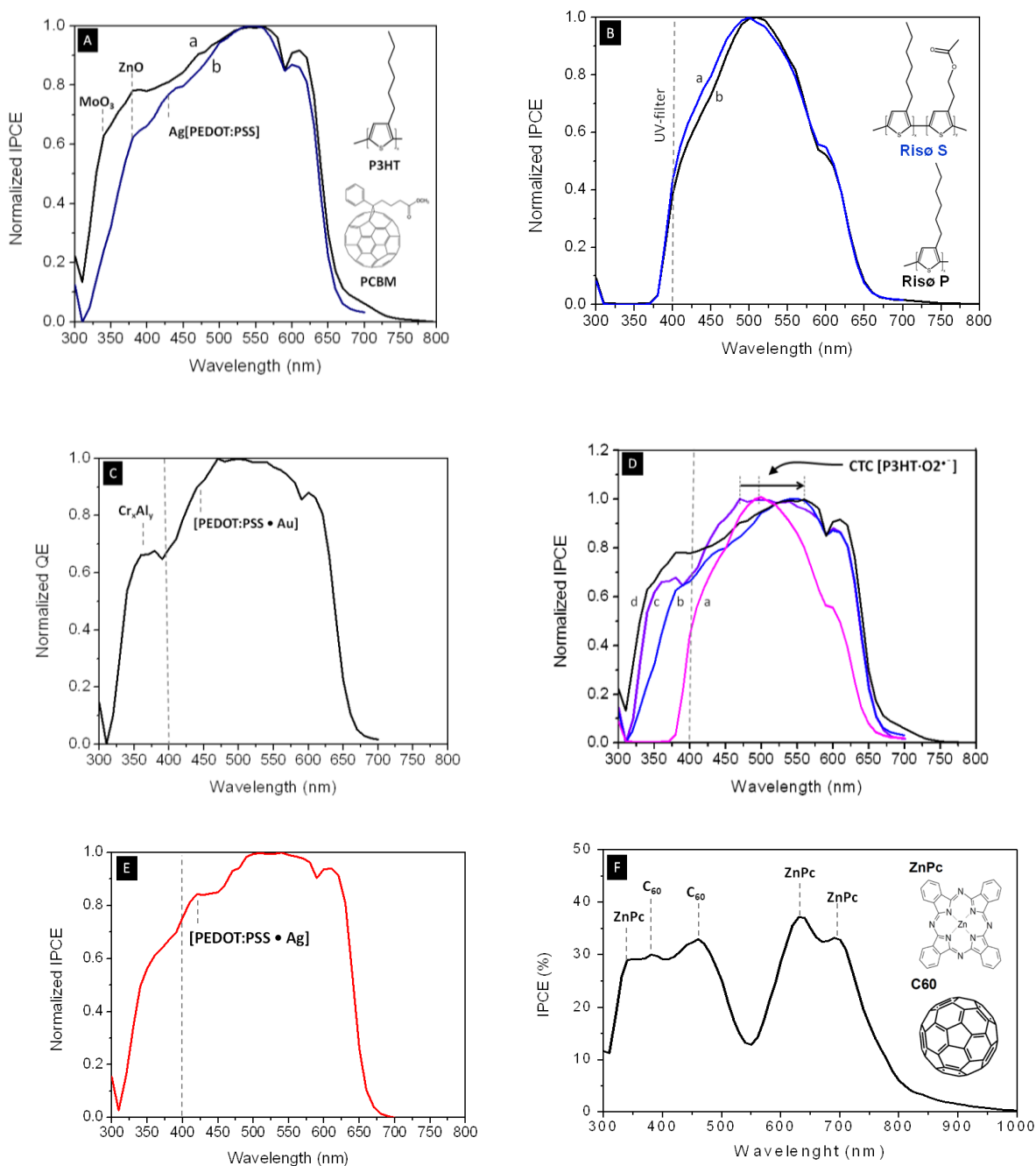


Figure S1. Normalized IPCE spectra for all solar cell devices. Inverted OPVs: A) IMEC (a) and NREL (b); B) RISØ-P (a) and RISØ-S (b); C) ISE; D) comparison of all inverted OPVs, E) HOLST and F) IAPP. Devices in D) are: a) RISØ -DTU, b) NREL, c) ISE and d) IMEC.

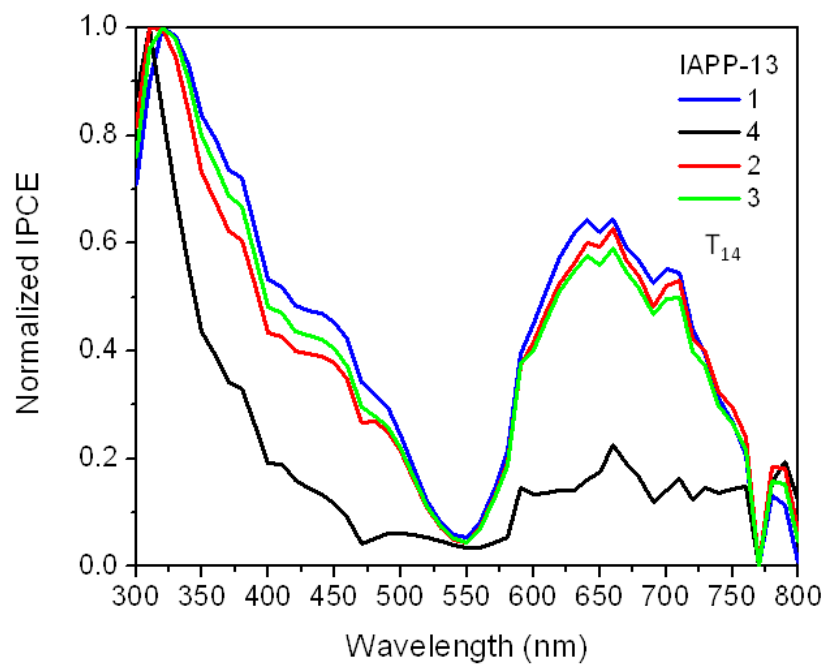


Figure S2. Normalized IPCE analysis made to the four solar cells of an IAPP substrate degraded at Full Sun until T_{14} (737 h) in air.

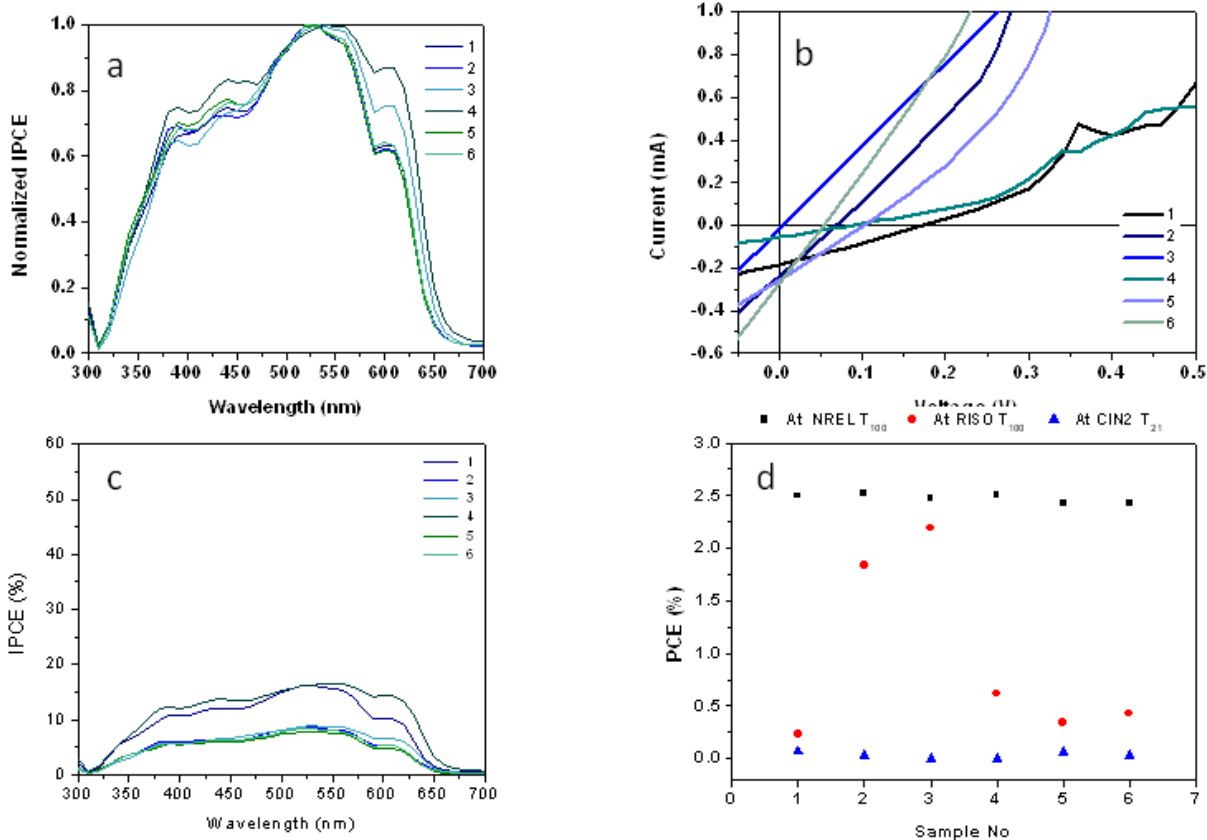


Figure S3. Analyses of all 6 solar cells of the NREL_28 (E) sample after dark storage at T_{21} . a) Normalized IPCE, b) IV-curves, c) IPCE (%), and d) PCE (%) measured at NREL laboratory at T_{100} (squares), at RISO-DTU at T_{100} (Circles) and at CIN2 at T_{21} (triangles).

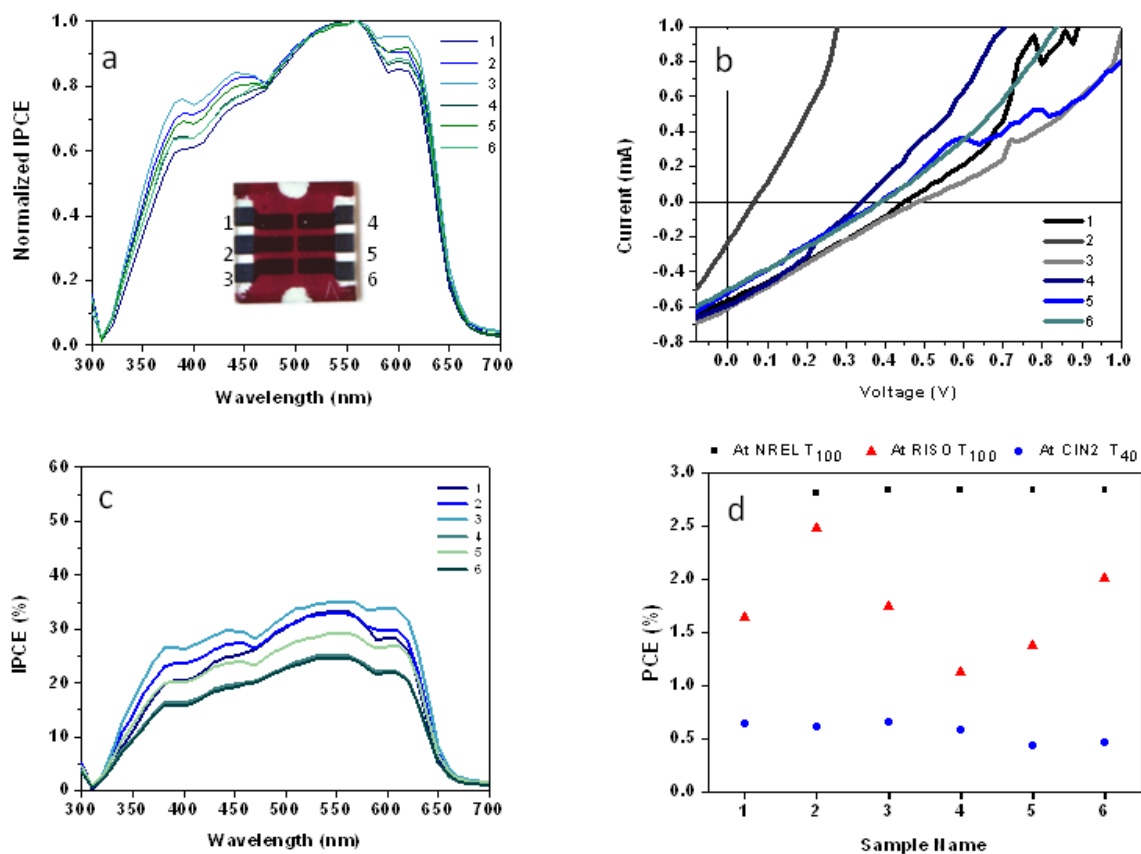


Figure S4. Analyses of all 6 solar cells of the NREL_25 (A) sample after low intensity fluorescent light test at T_{35} . a) Normalized IPCE, b) IV-curves, c) IPCE (%), and d) PEC (%) measured at NREL laboratory at T_{100} (squares), at RISO-DTU at T_{100} (triangles) and at CIN2 at T_{40} (circles).