



## Ambient pressure photoemission spectroscopy

### An Investigation of the Energy Levels within a Common Perovskite Solar Cell Device and a Comparison of DC/AC Surface Photovoltage Spectroscopy Kelvin Probe Measurements of Different MAPBI3 Perovskite Solar Cell Device Structures

Susanna E. Challinger, Iain D. Baikie, Jonathon R. Harwell, Graham A. Turnbull and Ifor D.W. Samuel  
MRS Advances (2017)

### Effect of Annealing Treatment on the Properties of Stoichiometric Indium Zinc Tin Oxide (IZTO) Thin Films

Maryane Putri, Ki Hwan Kim, Chang Young Koo, Jung-A Lee, Jeong-Joo Kim, Iain D. Baikie, Angela C. Grain and Hee Young Lee  
Journal of Nanoelectronics and Optoelectronics (2017), 12(6), pp. 611–616

### High-Throughput Electrical Potential Depth-Profiling in Air

Kevin J. Rietwyk, David A. Keller, Koushik Majhi, Adam Ginsburg, Maayan Priel, Hannah-Noa Barad, Assaf Y. Anderson and Arie Zaban  
Advanced Materials Interfaces (2017)

### Measurements of Natural and Synthetic Diamond Samples Using Kelvin Probe, Surface Photovoltage and Ambient Pressure Photoemission Techniques

Susanna Challinger, Iain Baikie and A. Glen Birdwell  
MRS Advances (2017)

### Polyacetylene-based polyelectrolyte as a universal interfacial layer for efficient inverted polymer solar cells

Sungho Nam, Jooyeok Seo, Myeonghun Song, Hwajeong Kim, Moonhor Ree, Yeong-Soon Gal, Donal D.C. Bradley, Youngkyoo Kim  
Organic Electronics (2017)

### Effects of Hole-Transport Layer Homogeneity in Organic Solar Cells – A Multi-Length Scale Study

Huei-Ting Chien, Markus Pözl, Georg Koller, Susanna Challinger, Callum Fairbairn, Iain Baikie, Markus Kratzer, Christian Teichert and Bettina Friedel  
Surfaces and Interfaces (2016)

### Flexible light-emitting electrochemical cells with single-walled carbon nanotube anodes

Laura Martínez-Sarti, Antonio Pertegás, María Monrabal-Capilla, Evgenia Gilshteyn, Ilkka Varjos, Esko I. Kauppinen, Albert G. Nasibulin, Michele Sessolo and Henk J. Bolink  
Organic Electronics (2016) 30, 36-39

### Probing the energy levels of perovskite solar cells via Kelvin probe and UV ambient pressure photoemission spectroscopy

J. R. Harwell, T. K. Baikie, I. D. Baikie, J. L. Payne, C. Ni, J. T. S. Irvine, G. A. Turnbull and I. D. W. Samuel  
Physical Chemistry Chemical Physics (2016)

### Small Molecule/Polymer Blend Organic Transistors with Hole Mobility Exceeding $13 \text{ cm}^2 \text{ V}^{-1} \text{ s}^{-1}$

Alexandra F. Paterson, Neil D. Treat, Weimin Zhang, Zhuping Fei, Gwenhvir Wyatt-Moon, Hendrik Faber, George Vourlias, Panos A. Patsalas, Olga Solomeshch, Nir Tessler, Martin Heaney and Thomas D. Anthopoulos  
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### Synthesis and characterization of low work function alkali oxide thin films for unconventional thermionic energy converters

V. Giorgis, F. Morini, T. Zhu, J.-F. Robillard, X. Wallart, J.-L. Codron and E. Dubois  
Journal of Applied Physics (2016), 120, 205108

### Copper thiocyanate: An attractive hole transport/extraction layer for use in organic photovoltaic cells

Neil D. Treat, Nir Yaacobi-Gross, Hendrik Faber, Ajay K. Perumal, Donal D. C. Bradley, Natalie Stingelin and Thomas D. Anthopoulos  
Appl. Phys. Lett. 107, 013301 (2015)

### Efficient organic solar cells using copper(I) iodide (CuI) hole transport layers

Ying Peng, Nir Yaacobi-Gross, Ajay K. Perumal, Hendrik A. Faber, George Vourlias, Panos A. Patsalas, Donal D. C. Bradley, Zhiqun He and Thomas D. Anthopoulos  
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## Near ambient pressure photoemission spectroscopy of metal and semiconductor surfaces

Iain D. Baikie, Angela Grain, James Sutherland and Jamie Law  
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## Ambient pressure photoemission spectroscopy of metal surfaces

Iain D. Baikie, Angela C. Grain, James Sutherland and Jamie Law  
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## Dual Mode Kelvin Probe: Featuring Ambient Pressure Photoemission Spectroscopy and Contact Potential Difference

Iain D. Baikie, Angela C. Grain, James Sutherland and Jamie Law  
Energy Procedia 60 (2014) 48-56

## Semiconducting properties of spinel tin nitride and other IV<sub>3</sub>N<sub>4</sub> polymorphs

Christopher M. Caskey, Jason A. Seabold, Vladan Stevanovic, Ming Ma, Wilson A. Smith, David S. Ginley, Nathan R. Neale, Ryan M. Richards, Stephan Lany and Andriy Zakutayev  
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## Scanning Kelvin probe

### A hybrid organic–inorganic three-dimensional cathode interfacial material for organic solar cells

Menglan Lv, Jacek J. Jasieniak, Jin Zhu and Xiwen Chen  
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### An investigation on the effect of H<sub>3</sub>PO<sub>4</sub> and HCl-doped polyaniline nanoparticles on corrosion protection of carbon steel by means of scanning kelvin probe

Ghasem Ebrahimi, Jaber Neshati and Fereshteh Rezaei  
Progress in Organic Coatings (2017), 105, pp.1-8.

### Anisotropic charge transport properties in boron sub phthalocyanine chloride thin films

Sameer Kalia, Aman Mahajan, C. G. Ghansyam, A. K. Debnath, Vibha Saxsena, D. K. Aswal and R. K. Bedi  
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### A simple synthesis method to prepare a molybdenum oxide hole-transporting layer for efficient polymer solar cells

Yanping Li, Huangzhong Yu, Xinxin Huang, Zuping Wu and Mingdong Chen  
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### A simple template-free immersion process to fabricate ZnO nanowire films on nanocrystalline zinc substrate at room temperature

Qingyang Li, Hao Lu, Juan Cui, Maozhong An, Dongyang Li  
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### Combinatorial sputtering of Ga-doped (Zn,Mg)O for contact applications in solar cells

Pravakar P. Rajbhandari, André Bikowski, John D. Perkins, Tara P. Dhakal, Andriy Zakutayev  
Solar Energy Materials and Solar Cells (2017), 159, pp.219-226.

### Cubic Quantum Dot/Hexagonal Microsphere ZnIn<sub>2</sub>S<sub>4</sub> Heterophase Junction for Exceptional Visible-Light-Driven Photocatalytic H<sub>2</sub> Evolution

Jinge Wang, Yajie Chen, Wei Zhou, Guohui Tian, yuting Xiao, Huiying Fu and Honggang Fu  
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### Dipole formation at organic/metal interfaces with pre-deposited and post-deposited metal

Zhanhao Hu, Zhiming Zhong, Kai Zhang, Zhicheng Hu, Chen Song, Fei Huang, Junbiao Peng, Jian Wang and Yong Cao  
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### Direct assembly of thioacid capped quantum dots in solid-state hybrid photovoltaics, effect of QDs size and thermal annealing

Manuel A. Triana, Oscar A. Jaramillo-Quintero, Rubén J. Camargo and Marina E. Rincón  
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## Electrostatically self-assembled chitosan derivatives working as efficient cathode interlayers for organic solar cells

Kai Zhang, Rongguo Xu, Wenjiao Ge, Meng Qi, Guangzhao Zhang, Qing-Hua Xu, Fei Huang, Yong Cao and Xiaohui Wang  
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## Enhanced Cl<sub>2</sub> sensitivity of cobalt-phthalocyanine film by utilizing a porous nanostructured surface fabricated on glass

Arvind Kumar, Soumen Samanta, S. Latha, A. K. Debnath, Ajay Singh, K. P. Muthe and Harish C. Barshilia  
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## Improved Efficiency of Blue Polymer Light-Emitting Diodes Using A Hole Transport Material

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Junfei Liang, Lei Ying, Wei Yang, Junbiao Peng and Yong Cao

## Improved H<sub>2</sub>S Sensitivity of Cobalt Phthalocyanine Film Fabricated on Plasma Treated Flexible Polyethylene terephthalate Substrate

Kumar, Arvind; Samanta, Soumen; Ramgir, Niranjana; Singh, Ajay; Debnath, Anil K.; Muthe, K. P.; Barshilia, Harish C.  
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## Improved mechanical adhesion and electronic stability of organic solar cells with thermal ageing: the role of diffusion at the hole extraction interface

William Greenbank, Nicholas John Rolston, Elodie Destouesse, Guillaume Wantz, Lionel Hirsch, Reinhold H. Dauskardt and Sylvain Chambon  
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## Improved performance for polymer solar cells using CTAB-modified MoO<sub>3</sub> as an anode buffer layer

Yanping Li, Huangzhong Yu, Xinxin Huang, Zuping Wu and Haihong Xu  
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## Influence of selenous acid microadditive on electrochemical formation of CdS thin films

Jelena Maricheva, Sergei Bereznev, Natalia Maticiuc, Olga Volobujeva and Julia Kois  
Electrochimica Acta (2017), 242, pp.280-286.

## Inverted OPVs with MoS<sub>2</sub> hole transport layer deposited by spray coating

Diego Barrera, Ali Jawaid, Trey B. Daunis, Lanxia Cheng, Qingxiao Wang, Yun-Ju Lee, Moon J. Kim, Jiyoung Kim, Richard A. Vaia and Julia W.P. Hsu  
Materials Today Energy (2017), 5, pp. 107-111

## Inverted polymer solar cells with Zn<sub>2</sub>SnO<sub>4</sub> nanoparticles as the electron extraction layer

Xiao-Juan Huang, Xiang Yao, Wen-Zhan Xu, Kai Wang, Fei Huang, Xiong Gong and Yong Cao  
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## Long term stability of c-Si surface passivation using corona charged SiO<sub>2</sub>

Ruy S. Bonilla, Christian Reichel, Martin Hermle, Phillip Hamer, Peter R. Wilshaw  
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## Modulation-Doped In<sub>2</sub>O<sub>3</sub>/ZnO Heterojunction Transistors Processed from Solution

Dongyoon Khim, Yen-Hung Lin, Sungho Nam, Hendrik Faber, Kornelius Tetzner, Ruipeng Li, Qiang Zhang, Jun Li, Xixiang Zhang and Thomas D. Anthopoulos  
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## On the c-Si/SiO<sub>2</sub> interface recombination parameters from photo-conductance decay measurements

Ruy S. Bonilla and Peter R. Wilshaw  
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## Passivation of all-angle black surfaces for silicon solar cells

Tasmiat Rahman, Ruy S. Bonilla, Amirjan Nawabjan, Peter R. Wilshaw, Stuart A. Boden  
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**Porous zinc oxide nanocrystalline film deposition by atmospheric pressure plasma: Fabrication and energy band estimation**  
Gunisha Jain, Manuel Macias-Montero, Tamilselvan Velusamy, Paul Maguire and Davide Mariotti  
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**Role of defects in one-step synthesis of Cu-doped ZnO nano-coatings by electrodeposition method with enhanced magnetic and electrical properties**  
K. Niranjan, Subhajt Dutta, Soney Varghese, Ajoy Kumar Ray, Harish C. Barshilia  
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**Silicon-Quantum-Dot Light-Emitting Diodes With Interlayer-Enhanced Hole Transport**  
Wei Gu, Xiangkai Liu, Xiaodong Pi, Xingliang Dai, Shuangyi Zhao, Li Yao, Dongsheng Li, Yizheng Jin, Mingsheng Xu, Deren Yang and Guogang Qin  
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**Solution-Based Synthesis of Ultrasmall Nb2O5 Nanoparticles for Functional Thin Films in Dye-Sensitized and Perovskite Solar Cells**  
Yu-Ting Huang, Rui Cheng, Peng Zhai, Hyeonseok Lee, Ya-Huei Chang, Shien-Ping Feng  
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**Solution-processed vanadium oxide thin film as the hole extraction layer for efficient hysteresis-free perovskite hybrid solar cells**  
Xiang Yao, Wenzhan Xu, Xiaojuan Huang, Jun Qi, Qingwu Yin, Xiaofang Jiang, Fei Huang, Xiong Gong and Yong Cao  
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**Solution synthesis of few-layer 2H MX<sub>2</sub> (M=Mo,W; X= S,Se)**  
Diego Barrera Mendez, Qingxiao Wang, Yun-Ju Lee, Lanxia Cheng, Moon Kim, Jiyoung Kim and Julia W. P. Hsu  
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**Study of work function and dry sliding wear behavior of Fe-based hardfacing alloys with and without nano rare earth oxides**  
Junfeng Gou, You Wang, Zhi Sun and Xuwei Li  
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**Tellurium-free thermoelectrics: Improved thermoelectric performance of n-type Bi<sub>2</sub>Se<sub>3</sub> having multiscale hierarchical architecture**  
Anil K. Bohra, Ranu Bhatt, Ajay Singh, Ranita Basu, Shovit Bhattacharya, K.N. Meshram, Sajid Ahmad, A.K. Debnath, A.K. Chauhan, Pramod Bhatt, Kunjal Shah, Ketan Bhotkar  
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**The influence of a Zr-based conversion treatment on interfacial bonding strength and stability of epoxy coated carbon steel**  
M. Sababi, H. Terryn and J.M.C. Mol  
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**Ti<sup>3+</sup> Self-doped Black TiO<sub>2</sub> Nanotubes with Mesoporous Nanosheet Architecture as Efficient Solar-Driven Hydrogen Evolution Photocatalysts**  
Xiangcheng Zhang, Weiyao Hu, Kaifu Zhang, Jianan Wang, Bojing Sun, Haoze Li, Panzhe Qiao, Lei Wang and Wei Zhou  
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**Ultra-small CuO nanoparticles with tailored energy-band diagram synthesized by a hybrid plasma-liquid process**  
Tamilselvan Velusamy, Anna Liguori, Manuel Macias-Montero, Dilli Babu Padmanaban, Darragh Carolan, Matteo Gherardi, Vittorio Colombo, Paul Maguire, Vladimir Svrcek and Davide Mariotti  
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**Work function measurements of copper nanoparticle intercalated polyaniline nanocomposite thin films**  
U. V. Patil, Niranjan S. Ramgir, A. Bhogale, A. K. Debnath, K. P. Muthe, S. C. Gadkari, and D. C. Kothari  
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**Black N/H-TiO<sub>2</sub> Nanoplates with a Flower-Like Hierarchical Architecture for Photocatalytic Hydrogen Evolution**  
Kaifu Zhang, Prof. Wei Zhou, Lina Chi, Xiangcheng Zhang, Weiyao Hu, Baojiang Jiang, Kai Pan, Guohui Tian and Prof. Zheng Jiang  
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## Controlled surface oxidation of multi-layered graphene anode to increase hole injection efficiency in organic electronic devices

Tae-Hee Han, Sung-Joo Kwon, Hong-Kyu Seo and Tae-Woo Lee  
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## Correlation Studies of Work Function and Optical Nonlinearity

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## Doping of Large Ionization Potential Indenopyrazine Polymers via Lewis Acid complexation with tris(pentafluorophenyl)borane: A Simple Method for Improving the Performance of Organic Thin-Film Transistors

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## Effects of nitrogen plasma treatment on the electrical property and band structure of few-layer MoS<sub>2</sub>

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Toshiyuki Yoshida, Kazato Shinohara, Daiki Itoharu and Yasuhisa Fujita  
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## Exceptional Visible-Light-Driven Cocatalyst-Free Photocatalytic Activity of g-C<sub>3</sub>N<sub>4</sub> by Well Designed Nanocomposites with Plasmonic Au and SnO<sub>2</sub>

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## Explore the electron work function as a promising indicative parameter for supplementary clues towards tailoring of wear-resistant materials

Jian Wang, Hao Lu, Bin Yu, Rongfeng Wang, Guomin Hua, Xianguo Yan, Leo Parent, Harry Tian, Reinaldo Chung, Dongyang Li  
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## Fabricating Low-Cost Ionic-Organic Electronic Ratchets with Graphite Pencil and Adhesive Tape

Viktor V. Brus, Samuel D. Collins, Oleksandr V. Mikhnenko, Ming Wang, Guillermo C. Bazan and Thuc-Quyen Nguyen  
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## Fabrication of Metallic Charge Transfer Channel between Photoanode Ti/Fe<sub>2</sub>O<sub>3</sub> and Cocatalyst CoOx: An Effective Strategy of Promoting Photoelectrochemical Water Oxidation

Shuo Li, Qidong Zhao, Dedong Meng, Dejun Wang and Tengfeng Xie  
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## Hexagonal FeS nanosheets with high-energy (001) facets: Counter electrode materials superior to platinum for dye-sensitized solar cells

Xiuwen Wang, Ying Xie, Buhe Bateer, Kai Pan, Yangtao Zhou, Yi Zhang, Guofeng Wang, Wei Zhou and Honggang Fu  
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## Hierarchical MoS<sub>2</sub>@MoP core-shell heterojunctions electrocatalysts for efficient hydrogen evolution reaction over a broad pH range

Aiping Wu, Chungui Tian, Haijing Yan, Yanqing Jiao, Qing Yan, Yang Guo-Yu and Honggang Fu  
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## High Color-Purity Green, Orange, and Red Light-Emitting Diods Based on Chemically Functionalized Graphene Quantum Dots

Woosung Kwon, Young-Hoon Kim, Ji-Hee Kim, Taehyung Lee, Sungan Do, Yoonsang Park, Mun Seok Jeong, Tae-Woo Lee and Shi-Woo Rhee  
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## Highly selective detection of trace hydrogen against CO and CH<sub>4</sub> by Ag/Ag<sub>2</sub>O–SnO<sub>2</sub> composite microstructures

Hui-Hui Li, Yi He, Pan-Pan Jin, Yang Cao, Mei-Hong Fan, Xiaoxin Zou and Guo-Dong Li  
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## Improving the work function of the niobium surface of SRF cavities by plasma processing

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## Incorporating TiO<sub>2</sub> nanotubes with a peptide of D-amino K122-4 (D) for enhanced mechanical and photocatalytic properties

L. Q. Guo, Y. W. Hu, B. Yu, E. Davis, R. Irvin, X. G. Yan and D. Y. Li  
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## In situ formation of ZnO/ZnSe nanonail array as photoelectrode for enhanced photoelectrochemical water oxidation performance

Liyang Wang, Guohui Tian, Yajie Chen, Yuting Xiao and Honggang Fu  
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## Investigation of microstructure and corrosion behavior of burnished aluminum alloy by TEM, EWF, XPS and EIS techniques

Lv Jinlong, Luo Hongyun, Liang tongxiang  
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## Investigation of the stability and biocompatibility of commonly used electrode materials in organic neuro-optoelectronics

A. Falco, B. Matarese, P. Feyen, F. Benfenati, P. Lugli and J. C. de Mello  
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## Large-Scale Synthesis of Stable Mesoporous Black TiO<sub>2</sub> Nanosheets for Efficient Solar-Driven Photocatalytic Hydrogen Evolution via Earth-Abundant Low-Cost Biotemplate

Kaifu Zhang, Wei Zhou, Xiangcheng Zhang, Yang Qu, Lei Wang, Weiyao Hu, Kai Pan, Mingxia Li, Ying Xie, Baojiang Jiang and Guohui Tian  
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## Low-Temperature Solution-Processed Electron Transport Layers for Inverted Polymer Solar Cells

Jiaqi Zhang, Jorge C. D. Faria, Maurizio Morbidoni, Yoann Porte, Claire H. Burgess, Khallil Harrabi and Martyn A. McLachlan  
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## Methanol treatment on low-conductive PEDOT:PSS to enhance the PLED's performance

Chen Song, Zhiming Zhong, Zhanhao Hu, Juanhong Wang, Lei Wang, Lei Ying, Jian Wang and Yong Cao  
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## Narrow Band Gap Lead Sulfide Hole Transport Layers for Quantum Dot Photovoltaics

Nanlin Zhang, Darren Chi Jin Neo, Yujiro Tazawa, Xiuting Li, Hazel Elaine Assender, Richard G Compton and Andrew A.R. Watt  
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## PTFE/MoO<sub>3</sub> Anode bi-layer Buffer Layers for Improved Performance in PCDTBT:PC71BM Blend Organic Solar Cells

Panpan Zhang, Xu Xu, Yang Dang, Shuai Huang, Xin Chen, Bonan Kang and S. Ravi P Silva  
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## Roll to Roll Compatible Fabrication of Inverted Organic Solar Cells with a Self-Organized Charge Selective Cathode Interfacial Layer

Hong Zhang, Wan-Yi Tan, Stefanie Fladischer, Lili Ke, Tayebbeh Ameri, Ning Li, Mathieu Turbiez, Erdmann Spiecker, Xuhui Zhu, YONG CAO and Christoph J. Brabec  
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## Room-temperature solution-processed and metal oxide-free nano-composite for the flexible transparent bottom electrode of perovskite solar cells

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## Sequential two-step hydrothermal growth of MoS<sub>2</sub>/CdS core-shell heterojunctions for efficient visible light-driven photocatalytic H<sub>2</sub> evolution

Aiping Wu, Chungui Tian, Yanqing Jiao, Qing Yan, Guoyu Yang, Honggang Fu  
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## Solution processed SnO<sub>2</sub>:Sb transparent conductive oxide as alternative to Indium Tin Oxide for applications in Organic Light Emitting Diodes

Mazran Esro, Stamatis Georgakopoulos, Haizhou Lu, George Vourlias, Anthony Krier, Bill Milne, W P Gillin and George Adamopoulos  
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## Solution-processed VOX prepared from a novel synthetic method as the hole extraction layer for polymer solar cells

Xiong Gong, wenzhan xu, Yongtao Liu, Xiaojuan Huang, Lili Jiang, Qingduan Li, Xiaowen Hu, Fei Huang and Yong Cao  
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## The role of minor yttrium in tailoring the failure resistance of surface oxide film formed on Mg alloys

Meisam Nouri, Ziran Liu, Dongyang Li, Xiaoguo Yan, Nabila Tahreen and Daolun Chen  
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## VOx Effectively Doping CVD-Graphene for Transparent Conductive Films

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## Alternative carrier injection/extraction inspired by electrode interlayers based on peripheral modification of the electron-rich skeleton

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## A New Interconnecting Layer of Metal Oxide/Dipole Layer/Metal Oxide for Efficient Tandem Organic Solar Cells

Shunmian Lu, Xing Guan, Xinchun Li, Wei E. I. Sha, Fengxian Xie, Hongchao Liu, Jiannong Wang, Fei Huang and Wallace C. H. Choy  
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## An ITO-free polymer solar cell on flexible glass

Nadia Formica, Paola Mantilla-Perez, Dhriti Sundar Ghosh, Davide Janner, Tong Lai Chen, Minghuang Huang, Sean Garner, Jordi Martorell and Valerio Pruneri  
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## A Universal Interface Layer Based on an Amine-Functionalized Fullerene Derivative with Dual Functionality for Efficient Solution Processed Organic and Perovskite Solar Cells

Hamed Azimi, Tayebah Ameri, Hong Zhang, Yi Hou, Cesar Omar Ramirez Quiroz, Jie Min, Mengyao Hu, Zhi-Guo Zhang, Thomas Przybilla, Gebhard J. Matt, Erdmann Spiecker, Yongfang Li and Christoph J. Brabec  
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## Controlled surface oxidation of multi-layered graphene anode to increase hole injection efficiency in organic electronic devices

Tae-Hee Han, Sung-Joo Kwon, Hong-Kyu Seo and Tae-Woo Lee  
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## Designing and synthesis of imidazole based hole transporting material for solid state dye sensitized solar cells

Ramanpreet Kaur Aulakh, Sana Sandhub, Tanvi, Sandeep Kumar, Aman Mahajan, R.K. Bedi and Subodh Kumar  
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Zuosheng Peng, Yuxin Xia, Feng Gao, Kang Xiong, Zhanhao Hu, David James, Junwu Chen, Ergang Wang and Lintao Hou  
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## Efficient organic solar cells using copper(I) iodide (CuI) hole transport layers

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## Exploring and controlling intrinsic defect formation in SnO<sub>2</sub> thin films

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