



Scanning Kelvin Probe Systems

- **Tuning the work function of graphene by ultraviolet irradiation**

Yow-Jon Lin and Jian-Jhou Zeng

Appl. Phys. Lett. 102, 183120 (2013)

<http://scitation.aip.org/content/aip/journal/apl/102/18/10.1063/1.4804289>

Keywords: graphene, work functions, ultraviolet light, ultraviolet radiation effects, gold, carrier density, adsorbates, copper, Dirac equation, semiconductor growth

- **Near infra-red transparent Mo-doped In₂O₃ by hetero targets sputtering for phosphorescent organic light emitting diodes**

Yong-Hee Shin, Sin-Bi Kang, Sunghun Lee, Jang-Joo Kim, Han-Ki Kim

Organic Electronics 14 (2013) 926–933

<http://www.sciencedirect.com/science/article/pii/S1566119913000086>

Keywords: IMO, organic light emitting diodes

- **Comprehensive picture of p-type doping of P3HT with the molecular acceptor F4TCNQ**

P. Pingel and D. Neher

Physical Review B 87, 115209 (2013)

<http://prb.aps.org/abstract/PRB/v87/i11/e115209>

Keywords: P3HT, F4TCNQ

- **Room temperature H₂S sensor based on Au modified ZnO nanowires**

Niranjan S. Ramgir, Preetam K. Sharma, N. Datta, M. Kaur, A.K. Debnath, D.K. Aswal, S.K. Gupta

Sensors and Actuators B 186 (2013) 718–726

<http://www.sciencedirect.com/science/article/pii/S092540051300751X>

Keywords: ZnO nanowires, Schottky type barrier junction, H₂S, sensors, work function

- **Selective H₂S sensing characteristics of CuO modified WO₃ thin films**

Niranjan S. Ramgir, C.P. Goyal, P.K. Sharma, U.K. Goutam, S. Bhattacharya, N. Datta, M. Kaur, A.K. Debnath, D.K. Aswal, S.K. Gupta

Sensors and Actuators B 188 (2013) 525–532

<http://www.sciencedirect.com/science/article/pii/S0925400513008496>

Keywords: WO₃, CuO, nano p–n junction, gas sensing, H₂S

- **Determination of surface recombination velocities of organic monolayers on silicon through Kelvin probe**

Nicholas Alderman, Mohd Adib Ibrahim, Lefteris Danos, Martin C. Grossel, and Tom Markvart

Appl. Phys. Lett. 103, 081603 (2013)

<http://scitation.aip.org/content/aip/journal/apl/103/8/10.1063/1.4818768>

Keywords: surface passivation, semiconductor surfaces, photons, silicon, velocity measurement, monolayers, passivation, carrier generation, illumination, surface measurements

- **Anisotropy in amorphous films of cross-shaped molecules with an accompanying effect on carrier mobility: Ellipsometric and sum-frequency vibrational spectroscopy studies**

Masahito Oh-e, Hidenori Ogata, Yoshimasa Fujita, and Mitsuhiro Kodan

Appl. Phys. Lett. 102, 101905 (2013)

<http://scitation.aip.org/content/aip/journal/apl/102/10/10.1063/1.4792746>

Keywords: anisotropy, polycyclic aromatic hydrocarbons, Fermi surface, transport properties, organic light emitting diodes, thin film devices, ellipsometry, infrared spectra, vibrational spectroscopy, carrier mobility

- **The effect of light soaking on crystalline silicon surface passivation by atomic layer deposited Al₂O₃**

Liao, Baochen, Stangl, Rolf, Mueller, Thomas, Lin, Fen, Bhatia, Charanjit S., Hoex, Bram

Journal of Applied Physics (Volume 113, Issue 2)

<http://scitation.aip.org/content/aip/journal/jap/113/2/10.1063/1.4775595>

Keywords: aluminium compounds, atomic layer deposition, carrier lifetime, corona, elemental semiconductors, numerical analysis, passivation, silicon solar cells



KP Technology Publication List

Scanning Kelvin Probe Systems

- **Functioned RGO with PolySchiff base: Multi-Chemical Sensor for TNT, Acidochromic and Electrochromic Properties**
Lina Ma, Ping Zhao, Wenjun Wu, Haijun Niu, Jiwei Cai, Yongfu Lian, Xuduo Bai, Wen Wang
Polym. Chem., 2013,4, 4746-4754
<http://pubs.rsc.org/en/Content/ArticleLanding/2013/PY/c3py00641g>
Keywords: RGO, polyschiff base, graphene, work functions
- **Effects of rapid thermal annealing on electrical, optical, and structural properties of Ni-doped In₂O₃ anodes for bulk heterojunction organic solar cells**
Jun Ho Kim and Tae-Yeon Seong; Han-Ki Kim
J. Vac. Sci. Technol. A 31(2), Mar/Apr 2013
<http://scitation.aip.org/content/avs/journal/jvsta/31/2/10.1116/1.4774212>
Keywords: anodes, annealing, thin films, work functions, electrical resistivity, ozone, thin film structure, near infrared imaging, optical properties, X-ray diffraction
- **Correlation between the Open Circuit Voltage and the Energetics of Organic Bulk Heterojunction Solar Cells**
Ilja Lange, Juliane Kniepert, Patrick Pingel, Ines Dumsch, Sybille Allard, Silvia Janietz, Ullrich Scherf, and Dieter Neher
J. Phys. Chem. Lett., 2013, 4, pp 3865–3871
<http://pubs.acs.org/doi/abs/10.1021/jz401971e>
Keywords: polymer solar cells, P3HT, PCPDTBT, PCBM, ICBA, DOS, HOMO, LUMO
- **Effect of Zr doping power on the electrical, optical and structural properties of In–Zr–O anodes for P3HT: PCBM thin-film organic solar cells**
Da-Young Cho, Kwun-Bum Chung, Seok-In Na and Han-Ki Kim
J. Phys. D: Appl. Phys. 46 (2013) 295305
<http://iopscience.iop.org/0022-3727/46/29/295305>
Keywords: IZrO, thin films, organic solar cells
- **Effect of Functional Groups on the Sensing Properties of Silicon Nanowires toward Volatile Compounds**
Bin Wang and Hossam Haick
ACS Appl. Mater. Interfaces, 2013, 5 (6), pp 2289–2299
<http://pubs.acs.org/doi/abs/10.1021/am4004649>
Keywords: silicon nanowire, field effect transistor, sensor, molecular layer, dipole
- **Highly-Tunable Nickel Cobalt Oxide as a Low-Temperature P-Type Contact in Organic Photovoltaic Devices**
Paul F. Ndione, Andres Garcia, N. Edwin Widjonarko, Ajaya K. Sigdel, K. Xerxes Steirer, Dana C. Olson, Philip A. Parilla, David S. Ginley, Neal R. Armstrong, Robin E. Richards, Erin L. Ratcliff, Joseph J. Berry
Advanced Energy Materials, Volume 3, Issue 4, pages 524–531, April, 2013
<http://onlinelibrary.wiley.com/doi/10.1002/aenm.201200742/full>
Keywords: organic Photovoltaics, nickel cobalt oxide, hole transport layer, hydroxyls
- **Application of in situ measurement of photo-induced variations in electron work functions for in-depth understanding of the photocatalytic activity of TiO₂ nanotubes**
Ning Fu, Xihu Tang and Dongyang Li
Nanotechnology 23 (2012) 275704
<http://iopscience.iop.org/0957-4484/23/27/275704>
Keywords: electron work function, TiO₂ nanotube arrays, electron–hole recombination, photocatalytic material
- **Impact of electrode roughness on metal-insulator-metal tunnel diodes with atomic layer deposited Al₂O₃ tunnel barriers**
Nasir Alimardani, E. William Cowell, III, John F. Wager, John F. Conley, Jr., David R. Evans, Matthew Chin, Stephen J. Kilpatrick, and Madan Dubey
J. Vac. Sci. Technol. A 30, 01A113 (2012)
<http://ieeexplore.ieee.org/iel5/4915548/6007012/06101331.pdf>
Keywords: MIM devices, alumina, atomic layer deposition, electrical conductivity, electrodes, insulating materials, surface roughness, tunnel diodes, tunnelling, work function



Scanning Kelvin Probe Systems

- **Improvement of Interfacial Contacts for New Small-Molecule Bulk-Heterojunction Organic Photovoltaics**

Andres Garcia, Gregory C. Welch, Erin L. Ratcliff, David S. Ginley, Guillermo C. Bazan, Dana C. Olson

Advanced Materials, Volume 24, Issue 39, pages 5368–5373, October 9, 2012

<http://onlinelibrary.wiley.com/doi/10.1002/adma.201200963/full>

Keywords: PEDOT:PSS, organic solar cells, small molecules, hole transport layer, interfacial chemistry, bulk-heterojunction organic photovoltaics

- **Sputtered nickel oxide thin film for efficient hole transport layer in polymer–fullerene bulk-heterojunction organic solar cell**

N. Edwin Widjonarko, Erin L. Ratcliff, Craig L. Perkins, Ajaya K. Sigdel, Andriy Zakutayev, Paul F. Ndione, Dane T. Gillaspie, David S. Ginley, Dana C. Olson, Joseph J. Berry

Thin Solid Films, Volume 520, Issue 10, 1 March 2012, Pages 3813–3818

<http://www.sciencedirect.com/science/article/pii/S0040609011017998>

Keywords: nickel oxide, organic solar cells, hole transport layer, selective interlayer, work function, organic-oxide interface

- **Fluorinated copper-phthalocyanine/cobalt-phthalocyanine organic heterojunctions: Charge transport and Kelvin probe studies**

A. K. Debnath, Arvind Kumar, S. Samanta, R. Prasad, A. Singh, A. K. Chauhan, P. Veerender, S. Singh, S. Basu, D. K. Aswal, and S. K. Gupta

Appl. Phys. Lett. 100, 142104 (2012)

<http://scitation.aip.org/content/aip/journal/apl/100/14/10.1063/1.3699272>

Keywords: organic heterojunctions, charge accumulation layer

- **Interactive Effect of Hysteresis and Surface Chemistry on Gated Silicon Nanowire Gas Sensors**

Yair Paska and Hossam Haick

ACS Appl. Mater. Interfaces, 2012, 4 (5), pp 2604–2617

<http://pubs.acs.org/doi/abs/10.1021/am300288z>

Keywords: silicon, nanowire, transistor, sensor, hysteresis

- **An Electrochemical Approach for Deposition of Polyfullerene Films on ITO Substrates**

P. Veerender, S. P. Koiry, P. Jha, Vibha Saxena, A. K. Chauhan, S. Bhattacharya, R. Tewari, D. K. Aswal, and S. K. Gupta

Journal of The Electrochemical Society, 159 (1) D13-D18 (2012)

<http://jes.ecsdl.org/content/159/1/D13>

Keywords: polyfullerene, electrodeposited films

- **Work function of colloidal semiconducting nanocrystals measured by Kelvin probe**

P Kulis, J Butikova, B Polyakov, G Marcins, J Pervenecka, K Pudzs, I Tale

IOP Conf. Series: Materials Science and Engineering 38 (2012) 012048

<http://iopscience.iop.org/1757-899X/38/1/012048>

Keywords: CdS, PbS, Cu₂S, Ag₂S, ZnO, nanocrystals, thin films, ITO

- **Advancing MIM Electronics: Amorphous Metal Electrodes**

E. William Cowell III, Nasir Alimardani, Christopher C. Knutson, John F. Conley Jr., Douglas A. Keszler, Brady J. Gibbons, John F. Wager

Advanced Materials, Volume 23, Issue 1, pages 74–78, January 4, 2011

<http://onlinelibrary.wiley.com/doi/10.1002/adma.201002678/full>

Keywords: electronic structures, charge transport, thin films, electrodes, metals

- **Synthesis of azobenzene substituted tripod-shaped bi(p-phenylene)s. Adsorption on gold and CdS quantum-dots surface**

Jesus Hierrezuelo, Rodrigo Rico, María Valpuesta, Amelia Díaz, J. Manuel Lopez Romero, Martins Rutkis, Jana Kreigberga, Valdis Kampars, Manuel Algorra

Tetrahedron 69 (2013) 3465e3474

<http://www.sciencedirect.com/science/article/pii/S0040402013002809>

Keywords: oligo(p-phenylene)s, chromophores, SAMs, surfaces, nanostructures, sensors



KP Technology Publication List

Scanning Kelvin Probe Systems

- **Electrical Potential of Acupuncture Points: Use of a Noncontact Scanning Kelvin Probe**

Brian J. Gow, Justine L. Cheng, Iain D. Baikie, Ørjan G. Martinsen, Min Zhao, Stephanie Smith, and Andrew C. Ahn
Evidence-Based Complementary and Alternative Medicine, Volume 2012, Article ID 632838
<http://www.ncbi.nlm.nih.gov/pubmed/23320033>

Keywords: electrical potential, biological tissues

- **Applying the Kelvin probe to biological tissues: Theoretical and computational analyses**

Andrew C. Ahn, Brian J. Gow, Ørjan G. Martinsen, Min Zhao, Alan J. Grodzinsky, and Iain D. Baikie
Physical Review E 85.6 (2012): 061901
<http://www.ncbi.nlm.nih.gov/pubmed/23005121>

Keywords: biological tissue, biomaterials, highly conductive, conductive dielectric, perfect dielectric

- **Investigation of blister formed on coated mild steel using scanning Kelvin Probe**

Zalilah Sharer Sahir and John Malcolm Sykes
Jurnal Teknologi, 56, Dis. 2011: 139-154

<http://www.jurnalteknologi.utm.my/index.php/jurnalteknologi/article/view/906>

Keywords: organic coating, blister

- **Growth and gas sensing characteristics of p- and n-type ZnO nanostructures**

N.S. Ramgir, M. Ghosh, P. Veerender, N. Datta, M. Kaur, D.K. Aswal, S.K. Gupta
Sensors and Actuators B: Chemical, Volume 156, Issue 2, August 2011, Pages 875–880
<http://www.sciencedirect.com/science/article/pii/S0925400511001808>

Keywords: ZnO, nanoparticles, nanowires, gas sensor, H₂S, p-type semiconductor

- **Energy structure of thin films of carbazole derivatives with metal electrodes**

K.Pudzis, I. Muzikante, E. Fonavs, J. Simokaitiene, S. Grigalevicius, J.V. Grazilevicius
IOP Conf. Series: Materials Science and Engineering 23 (2011) 012020
<http://iopscience.iop.org/1757-899X/23/1/012020>

Keywords: charge carrier transport, organic electroluminescent devices, organic photovoltaic devices, organic field-effect transistors, thin organic films

- **Cathodic disbonding of an unpigmented epoxy coating on mild steel under semi- and full-immersion conditions**

Huichao Bi, John Sykes

Corrosion Science 53 (2011) 3416–3425

<http://www.sciencedirect.com/science/article/pii/S0010938X11003398>

Keywords: organic coatings, mild steel, oxygen reduction, paint coatings

- **Effect of 1.10-Phenanthroline on Electroless Copper Plating Using Formaldehyde as Reductant**

Zhao Qing, Zhang Chuanbo, Wang Shuaixing, Du Nan, Zhao Lin, Li Yuanyuan
Journal of Chinese Society for Corrosion and Protection

<http://www.jcscp.org>

Keywords: phenanthroline, formaldehyde, copper coating

- **Probing gas response of pure and Au modified ZnO nanowires network using work function measurements**

Preetam K. Sharma, Niranjana S. Ramgir, N. Datta, M. Kaur, C. P. Goyal, S. Kailasaganapathi, A. K. Debnath, D. K. Aswal, and S. K. Gupta

AIP Conf. Proc. 1512, pp. 346-347

<http://scitation.aip.org/content/aip/proceeding/aipcp/10.1063/1.4791053>

Keywords: II-VI semiconductors, zinc oxide films, work functions, gold, nanowires, electron gas, Fermi levels, stress strain relations, surface states



KP Technology Publication List

Scanning Kelvin Probe Systems

- **Electron accumulation/depletion at F16CoPc/Znq3 heterojunction: Kelvin probe and charge transport study**

Ashwini Kumar, R. Prasad, Arvind Kumar, Soumen Samanta, Ajay Singh, A. K. Debnath, D. K. Aswal, and S. K. Gupta
AIP Conf. Proc. 1512, pp. 770-771

<http://scitation.aip.org/content/aip/proceeding/aipcp/10.1063/1.4791265>

Keywords: heterojunctions, cobalt, electric measurements

- **Charge transport and Kelvin Probe study of organic semiconductor hetero-junction**

Arvind Kumar, Soumen Samanta, Ajay Singh, A. K. Debnath, R. Prasad, D. K. Aswal, and S. K. Gupta
AIP Conf. Proc. 1451, pp. 286-288

<http://scitation.aip.org/content/aip/proceeding/aipcp/10.1063/1.4732443>

Keywords: charged currents, metallic thin films, molecular beam epitaxy, cobalt, copper, current density, electrical properties, organic semiconductors

- **Reverse rectification behavior of NiPc (p-type)/F16CuPc (n-type) heterojunction**

Arvind Kumar, Soumen Samanta, Ajay Singh, A. K. Debnath, R. Prasad, D. K. Aswal, and S. K. Gupta
AIP Conf. Proc. 1447, pp. 755-756

<http://scitation.aip.org/content/aip/proceeding/aipcp/10.1063/1.4710223>

Keywords: organic heterojunction, reverse rectification

- **Microfabricated Nitrogen-Phosphorus Detector: Chemically Mediated Thermionic Emission**

Robert J. Simonson, Ryan F. Hess, Matthew Moorman, Timothy Boyle

<http://prod.sandia.gov/techlib/access-control.cgi/2012/127778.pdf>

Keywords: nitrogen-phosphorus detectors



KP Technology Publication List

Ambient Kelvin Probe Systems

- **High work-function hole transport layers by self-assembly using a fluorinated additive**

Scott A. Mauger, Jun Li, Özge Tüzün Özmen, Andy Y. Yang, Stephan Friedrich, M. Diego Rail, Louise A. Berben and Adam J. Moulé

J. Mater. Chem. C, 2013, Advance Article

<http://pubs.rsc.org/en/content/articlelanding/2013/tc/c3tc30973h>

Keywords: PEDOT:PSS, S-P3MEET, PFI, transparent conducting organic films

- **Transparent organic thin film transistors with WO₃/Ag/WO₃ source-drain electrodes fabricated by thermal evaporation**

Nan Zhang, Yongsheng Hu, and Xingyuan Liu

Appl. Phys. Lett. 103, 033301 (2013)

<http://scitation.aip.org/content/aip/journal/apl/103/3/10.1063/1.4813838>

Keywords: electrodes, silver, contact resistance, electrodeposition, sputter deposition, work functions, thin films, thin film devices, vacuum deposition, thin film transistors

- **Effect of chain length on the sensing of volatile organic compounds by means of silicon nanowires**

Bin Wang and Hossam Haick

ACS Appl. Mater. Interfaces, 2013, 5 (12), pp 5748-5756

<http://pubs.acs.org/doi/abs/10.1021/am401265z>

Keywords: silicon nanowire, field effect transistor, vapor sensor, dipole, volatile organic compound

- **Role of a disperse carbon interlayer on the performances of tandem a-Si solar cells**

Andreia Araujo, Raquel Barros, Tiago Mateus, Diana Gaspar, Nuno Neves, Antonio Vicente, Sergej A Filonovich, Pedro Barquinha, Elvira Fortunato, Ana M Ferraria, Ana M Botelho do Rego, Ana Bicho, Hugo Aguas and Rodrigo Martins

Sci. Technol. Adv. Mater. 14 (2013) 045009

<http://iopscience.iop.org/1468-6996/14/4/045009>

Keywords: AZO, amorphous silicon solar cells, x-ray photoelectron spectroscopy

- **The electronic transport mechanism in indium molybdenum oxide thin films RF sputtered at room temperature**

Elangovan Elamurugu, Parthiban Shanmugam, Goncalo Goncalves, Nuno Franco, Eduardo Alves, Rodrigo Martins and Elvira Fortunato

Europhysics Letters, Volume 97, Number 3

<http://iopscience.iop.org/0295-5075/97/3/36002>

Keywords: IMO, thin films, crystallinity, work function, transmittance, optical detectors, solar cells

- **Calcium niobate nanosheets as a novel electron transport material for solution-processed multi-junction polymer solar cells**

Lilian Chang, Michael A. Holmes, Mollie Waller, Frank E. Osterloh and Adam J. Moulé

J. Mater. Chem., 2012, 22, 20443-20450

<http://pubs.rsc.org/en/content/articlelanding/2012/jm/c2jm33351a>

Keywords: perovskite, P3HT:PCBM, PEDOT:PSS

- **Directional dependence of electron blocking in PEDOT:PSS**

Scott A. Mauger, Lilian Chang, Christopher W. Rochester, Adam J. Moulé

Organic Electronics, Volume 13, Issue 11, November 2012, Pages 2747–2756

<http://www.sciencedirect.com/science/article/pii/S1566119912003771>

Keywords: PEDOT:PSS, electron blocking, organic photovoltaics, inverted architecture

- **The influence of substrate morphology on thickness uniformity and unintentional doping of epitaxial graphene on SiC**

Jens Eriksson, Ruth Pearce, Tihomir Iakimov, Chariya Virojanadara, Daniela Gogova, Mike Andersson, Mikael Syvajarvi, Anita Lloyd Spetz, and Rositza Yakimova

Applied Physics Letters 100, 241607 (2012)

<http://scitation.aip.org/content/aip/journal/apl/100/24/10.1063/1.4729556>

Keywords: graphene, doping, epitaxy, work functions, carrier density, surface charge, surface morphology, silicon, carbides, charge transfer



KP Technology Publication List

Ambient Kelvin Probe Systems

- **Improvement of the open circuit voltage by modifying the transparent ITO front electrode in amorphous n-i-p solar cells**
F.-J. Haug, R. Biron, G. Kratzer, F. Leresche, J. Besuchet, C. Ballif, M. Dissel, S. Kretschmer, W. Soppe, P. Lippens, and K. Leitner
Progress in Photovoltaics: Research and Applications, Volume 20, Issue 6, pages 727–734, September 2012
<http://onlinelibrary.wiley.com/doi/10.1002/pip.1220/abstract>
Keywords: amorphous silicon, solar cells, work function
- **Surface studies of crystalline and amorphous Zn–In–Sn–O transparent conducting oxides**
Diana E. Proffit, Steven P. Harvey, Andreas Klein, Robert Schafraneck, Jonathan D. Emery, D. Bruce Buchholz, Robert P.H. Chang, Michael J. Bedzyk, Thomas O. Mason
Thin Solid Films 520 (2012) 5633–5639
<http://www.sciencedirect.com/science/article/pii/S0040609012005366>
Keywords: ZITO, thin films, work function, Fermi level
- **Characterization of new transparent organic electrode materials**
Scott A. Mauger, Adam J. Moulé
Organic Electronics, Volume 12, Issue 11, November 2011, Pages 1948–1956
<http://www.sciencedirect.com/science/article/pii/S1566119911002849>
Keywords: hole transport layer, organic photovoltaics, organic light emitting diodes, PEDOT:PSS, S-P3MEET
- **Manganese-doped indium oxide and its application in organic light-emitting diodes**
Yaqin Liao, Qipeng Lu, Yi Fan, and Xingyuan Liu
Appl. Phys. Lett. 99, 023302 (2011)
<http://scitation.aip.org/content/aip/journal/apl/99/2/10.1063/1.3610559>
Keywords: anodes, organic light emitting diodes, thin films, surface measurements, electron beam deposition, surface morphology, electrical properties, indium, electrical resistivity, electrodeposition



KP Technology Publication List

Kelvin Probe & SPV Systems

- **Surface photovoltage characterization of organic photovoltaic devices**

Yun-Ju Lee, Jian Wang, and Julia W. P. Hsu

Applied Physics Letters 103, 173302 (2013)

<http://scitation.aip.org/content/aip/journal/apl/103/17/10.1063/1.4827104>

Keywords: surface photovoltage, bulk heterojunction, organic solar cells, carrier transport layers, donor/acceptor combinations

- **Kelvin Probe studies of alkyl monolayers on silicon (111) for surface passivation**

Nicholas Alderman, Lefteris Danos, Martin C. Grossel and Tom Markvart

RSC Adv., 2013,3, 20125-20131

<http://pubs.rsc.org/en/Content/ArticleLanding/2013/RA/C3RA42526F>

Keywords: chlorination-alkylation, surface passivation, recombination lifetime

- **Spectroscopic Evidence of Work Function Alterations Due to Photoswitchable Monolayers on Gold Surfaces**

Matthew A. Bartucci, Jan Florián, and Jacob W. Ciszek

J. Phys. Chem. C, 2013, 117 (38), pp 19471–19476

<http://pubs.acs.org/doi/abs/10.1021/jp405710u>

Keywords: interfacial dipoles, photochromophores, gold

- **Stability Study of Alkyl Monolayers Directly Attached to Si (111) Surface for Solar Cells Application**

Mohd Adib Ibrahim et al., Nicholas Alderman et al.

Latest Trends in Renewable Energy and Environmental Informatics

<http://www.wseas.org/multimedia/books/2013/Malaysia/RESEN.pdf>

Keywords: surface recombination, chemical passivation, 1-decene, hydrosilylation, alkyl monolayers

- **Planar metal-insulator-metal diodes based on the Nb/Nb₂O₅/X material system**

Matthew L. Chin, Prakash Periasamy, et al.

J. Vac. Sci. Technol. B 31(5), Sep/Oct 2013

<http://scitation.aip.org/content/avs/journal/jvstb/31/5/10.1116/1.4818313>

Keywords: niobium, gold, insulators, tunnelling, current density, work functions, electrodes, copper, silver, thin films

- **Large surface photovoltages observed at methyl terminated silicon surfaces synthesised through a two-step chlorination-alkylation method**

Nicholas Alderman, Lefteris Danos, Martin C. Grossel and Tom Markvart

RSC Adv., 2012,2, 7669-7672

<http://pubs.rsc.org/en/content/articlelanding/2012/RA/c2ra20465g>

Keywords: chlorination-alkylation method, recombination lifetime

- **Electro-optic investigation of the surface trapping efficiency in n-alkanethiol SAM passivated GaAs(001)**

Gregory M Marshall, Gregory P Lopinski, Farid Bensebaa and Jan J Dubowski

Nanotechnology 22 (2011) 235704

<http://iopscience.iop.org/0957-4484/22/23/235704>

Keywords: electro-optic characteristics, surface photovoltage, equilibrium surface barrier height, non-equilibrium band-bending potential, surface carrier capture, surface recombination velocity



Corrosion Kelvin Probe Systems

- **Influence of relative humidity and ozone on atmospheric silver corrosion**

R. Wiesinger, I. Martina, Ch. Kleber, M. Schreiner
Corrosion Science, Volume 77, December 2013, Pages 69–76
<http://www.sciencedirect.com/science/article/pii/S0010938X13003387>
Keywords: corrosion, polycrystalline silver, ozone oxidation

- **Lightning rod effect in surface work function of semiconductor nanomaterials**

Mingshan Xue, Wenfeng Wang, Junfei Ou, Fajun Wang, and Wen Li
Appl. Phys. Lett. 102, 243110 (2013)
<http://scitation.aip.org/content/aip/journal/apl/102/24/10.1063/1.4812238>
Keywords: nanorods, annealing, II-VI semiconductors, electronic transport, lightning discharges, surface structure, double layers, capacitors, electrostatics, nanowires

- **Galvanically Induced Intergranular Corrosion of AA5083-H131 Under Atmospheric Exposure Conditions: Part 2—Modeling of the Damage Distribution**

D. Mizuno and R.G. Kelly
Corrosion: June 2013, Vol. 69, No. 7, pp. 681-692
<http://corrosionjournal.org/doi/abs/10.5006/0813>
Keywords: AA5083, atmospheric corrosion, finite element method, galvanic corrosion, intergranular corrosion, modeling studies, sensitization

- **Galvanically Induced Intergranular Corrosion of AA5083-H131 Under Atmospheric Exposure Conditions: Part 1—Experimental Characterization**

D. Mizuno and R.G. Kelly
Corrosion: June 2013, Vol. 69, No. 6, pp. 580-592
<http://corrosionjournal.org/doi/abs/10.5006/0812>
Keywords: AA5083-H131, atmospheric corrosion, galvanic corrosion, intergranular corrosion, sensitization

- **On the correlation between surface morphology and electron work function of indium tin oxide**

Mingshan Xue, Hainan Wu, Junfei Ou, Fajun Wang, Xibao Li, Wen Li, and Zhonghao Jiang
J. Appl. Phys. 111, 123714 (2012)
<http://scitation.aip.org/content/aip/journal/jap/111/12/10.1063/1.4730388>
Keywords: corrosion, surface structure, double layers, surface morphology, electrodes, oxide surfaces, surface oxidation, thin film growth, solid surfaces, surface measurements

- **The Relationship of Surface Roughness and Work Function of Pure Silver by Numerical Modeling**

Ye Wan, Yanbo Li, Qing Wang, Ke Zhang, Yuhou Wu
Int. J. Electrochem. Sci., 7 (2012) 5204 - 5216
<http://www.electrochemsci.org/list12.htm>
Keywords: silver, work function, surface roughness, modeling study

- **Work Function Analysis of Gas Sensitive WO₃ Layers with Pt Doping**

G. Halek, I.D. Baikie, H. Tetrycz, P. Halek, P. Suchorska, K. Wiśniewski
IMCS 2012 – The 14th International Meeting on Chemical Sensors
<http://www.sciencedirect.com/science/article/pii/S0925400512013718>
Keywords: work function, activation energy change, tungsten trioxide, Pt doping, gas sensors



KP Technology Publication List

UHV Kelvin Probe Systems

- **m-BiVO₄@y-Bi₂O₃ core-shell p-n heterogeneous nanostructure for enhanced visible-light photocatalytic performance**

Mandi Han, Ting Sun, Pei Yun Tan, Xiaofeng Chen, Ooi Kiang Tan and Man Siu Tse

RSC Adv., 2013,3, 24964-24970

<http://pubs.rsc.org/en/content/articlelanding/2013/ra/c3ra42870b>

Keywords: Bi₂O₃ polymorphs, characterization, visible-light photocatalytic activities

- **Mechanochemical synthesis of nanostructured Sr(Ti_{1-x}Fe_x)O_{3-δ} solid-solution powders and their surface photovoltage responses**

Xiaofeng Chen, Qiong Luo, Mandi Han, Ooi Kiang Tan, Man Siu Tse, Hui Huang

Journal of Solid State Chemistry, Volume 189, May 2012, Pages 80–84

<http://www.sciencedirect.com/science/article/pii/S0022459612000266>

Keywords: Mechanochemical synthesis, Highenergy ball milling, Perovskite oxide, Surface photovoltage, Sr(Ti,Fe)O_{3-δ}

- **Solution-Processed LiF for Work Function Tuning in Electrode Bilayers**

Taner Aytun, Ayse Turak, Iain Baikie, Grzegorz Halek, and Clewa W. Ow-Yan

Nano Lett., 2012, 12 (1), pp 39–44

<http://pubs.acs.org/doi/abs/10.1021/nl202838a>

Keywords: surface work function tuning, organic solar cells, LiF, depolarization

- **Secondary electron yield on cryogenic surfaces as a function of physisorbed gases**

Asena Kuzucan, Holger Neupert, Mauro Taborelli, and Herbert Stoeri

J. Vac. Sci. Technol. A 30, 051401 (2012)

<http://scitation.aip.org/content/avs/journal/jvsta/30/5/10.1116/1.4736552>

Keywords: copper, adsorbates, carbon dioxide, secondary emission, adsorption, aluminium, surface photoemission, cryogenics, work functions, electron surface collisions

- **High vacuum cells for classical surface techniques**

Martinez, Imee Su, Baldelli, Steven

Review of Scientific Instruments (Volume 81, Issue 4, 2010)

http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=5442928

- **Adsorption structure of phenylphosphonic acid on an alumina surface**

Shinjiro Yagyu, Michiko Yoshitake, Nataliya Tsud, Toyohiro Chikyow

Applied Surface Science, Volume 256, Issue 4, 30 November 2009, Pages 1140–1143

<http://www.sciencedirect.com/science/article/pii/S0169433209006874>

- **Adsorption structure and work function of dicarboxylic acid on Cu(1 1 0) surface**

Shinjiro Yagyu, Michiko Yoshitake, Toyohiro Chikyow

Applied Surface Science, Volume 254, Issue 23, 30 September 2008, Pages 7835–7837

<http://www.sciencedirect.com/science/article/pii/S0169433208003693>

- **Direct comparison of photoemission spectroscopy and in situ Kelvin probe work function measurements on indium tin oxide films**

M.M. Beerbom, B. Lagel, A.J. Cascio, B.V. Doran, R. Schlaf

Journal of Electron Spectroscopy and Related Phenomena, Volume 152, Issues 1–2, June 2006, Pages 12–17

<http://www.sciencedirect.com/science/article/pii/S0368204806000077>

- **Pt–Ru model catalysts for anodic methanol oxidation: Influence of structure and composition on the reactivity**

Harry Hoster, Teresa Iwasita, Hermann Baumgartner and Wolf Vielstich

Phys. Chem. Chem. Phys., 2001,3, 337–346

<http://pubs.rsc.org/en/content/articlelanding/2001/cp/b004895j>