

6th Vacuum and Surface Sciences Conference of Asia and Australia

(VASSCAA-6)

Journal of Physics: Conference Series Volume Volume 439

**Islamabad, Pakistan
9-13 October 2012**

**ISBN: 978-1-62748-671-2
ISSN: 1742-6588**

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© by the Institute of Physics
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

011001 Preface: [6th Vacuum and Surface Sciences Conference of Asia and Australia \(VASSCAA-6\)](#) OPEN ACCESS Javaid Ahsan Bhatti, Talib Hussain and Wakil Khan

Papers

Surface Science and Engineering

012001 [Bioactive surfaces for antibody-antigen complex detection by Atomic Force Microscopy](#) OPEN ACCESS V Ierardi, F Ferrera, E Millo, G Damonte, G Filaci and U Valbusa

012002 [Synthesis and Characterization of Processable Polyaniline Salts](#) OPEN ACCESS S Gul, A-ul-H A Shah and S Bilal

012003 [Secondary electron energy loss coincidence \(e,2e\) spectroscopy on Ag and Si surfaces](#) OPEN ACCESS R Khalid, F S Pujol and W S M Werner

012004 [CFD analysis of heat transfer within a bottom heated vertical concentric cylindrical enclosure](#) OPEN ACCESS A H Malik, A Shah and S Khushnood

012005 [SiON metrology using angular and energy distributions of photoelectrons](#) OPEN ACCESS G Tasneem, C Tomastik, R Mroczyński and W S M Werner

012006 [Laser Surface Hardening of Groove Edges](#) OPEN ACCESS A Hussain, A H Hamdani, R Akhter and M Aslam

Nanometer Structures

012007 [Formation of carbon nano- and micro-structures on \$C_{11}\$ irradiated copper surfaces](#) OPEN ACCESS S Ahmad

012008 [Growth of vertically aligned multiwall carbon nanotubes columns](#) OPEN ACCESS M I Shahzad, M Giorcelli, D Perrone, A Virga, N Shahzad, P Jagdale, M Cocuzza and A Tagliaferro

012009 [Synthesis of multi-walled carbon nanotubes and their application in resin based nanocomposites](#) OPEN ACCESS S N Ahmad, S Hakeem, R A Alvi, K Farooq, N Farooq, F Yasmin and S Saeed

012010 [Study of carbon nanotubes based Polydimethylsiloxane composite films](#) OPEN ACCESS M I Shahzad, M Giorcelli, N Shahzad, S Guastella, M Castellino, P Jagdale and A Tagliaferro

012011 [Characterization and the Pattern of Surfaces of Sealant with nano size Composite Materials](#) OPEN ACCESS A Quddos, N H Samtio and A M Syed

012012 [Monitoring the dye impregnation time of nanostructured photoanodes for dye sensitized solar cells](#) OPEN ACCESS N Shahzad, D Pugliese, A Lamberti, A Sacco, A Virga, R Gazia, S Bianco, M I Shahzad, E Tresso and C F Pirri

012013 [Effect of doping on the Structural and Optical Properties of SnO₂ Thin Films fabricated by Aerosol Assisted Chemical Vapor Deposition](#) OPEN ACCESS S M Ali, S T Hussain, S A Bakar, J Muhammad and N ur Rehman

012014 [Frequency dependent dielectric measurements of Cd²⁺ doped Mn-Zn nano ferrites prepared by sol gel and coprecipitation methods](#) OPEN ACCESS A Humaira and M Asghari

012015 [Influence of Rare Earth \(Gd³⁺\) on Structural, Gigahertz Dielectric and Magnetic Studies of Cobalt ferrite](#) OPEN ACCESS E Pervaiz and I H Gul

012016 [Optimization of loading factor of Nanocomposite Coatings deposited by Physical Vapor Deposition](#) OPEN ACCESS S Alam, M Irfan, B D Soomro, M Shahid and M Zeeshan

012017 [Effect of doping of multi-walled carbon nanotubes on phenolic based carbon fiber reinforced nanocomposites](#) OPEN ACCESS S Saeed, S Hakeem, M Faheem, R A Alvi, K Farooq, S T Hussain and S N Ahmad

Thin Films

012018 [Photocatalytic thin films coupled with polymeric microcapsules for the controlled-release of volatile agents upon solar activation](#) OPEN ACCESS L F Oliveira, J Marques, P J G Coutinho, P Parpot and C J Tavares

012019 [Production and characterization of Ni and Cu composite coatings by electrodeposition reinforced with carbon nanotubes or graphite nanoplatelets](#) OPEN ACCESS M R A Karim, M Pavese, E P Ambrosio, D Ugues, M Lombardi, S Biamino, C Badini and P Fino

012020 [A controlled atmosphere tube furnace was designed for thermal CVD](#) OPEN ACCESS M Rashid, J A Bhatti, F Hussain, M Imran, I U Khawaja, K A Chaudhary and S A Ahmad

012021 [Investigation of failure mechanism of thermal barrier coatings \(TBCs\) deposited by EB-PVD technique](#) OPEN ACCESS M R Shahid and M Abbas

012022 [Enhancement of superconductivity of \$TlBa_2Ca_3Cu_4O_{12-\delta}\$ superconductors by Be doping](#) OPEN ACCESS N A Khan and M Shamraiz

012023 [Design and development of laser eye protection filter](#) OPEN ACCESS K Ahmed, A N Khan, A Rauf, A Gul and M Aslam

Electronic Material and Processing

012024 [Dielectric, electric and thermal properties of carboxylic functionalized multiwalled carbon nanotubes impregnated polydimethylsiloxane nanocomposite](#) OPEN ACCESS S Sagar, N Iqbal and A Maqsood

012025 [Piezoelectric and pyroelectric properties of Sr-doped PZT \(PSZT\) with minor manganese additions](#) OPEN ACCESS M A Aleem, H Nawaz, M Shuaib, S Qaisar and M S Akbar

012026 [Electrochemical impedance spectroscopy based MEMS sensors for phthalates detection in water and juices](#) OPEN ACCESS A I Zia, A R M Syaifudin, S C Mukhopadhyay, P L Yu, I H Al-Bahadly, C P Gooneratne, J Kosel and T-S Liao

012027 [Fabrication of Ni/Ti/Al Schottky contact to n-type 4H-SiC under various annealing conditions](#) OPEN ACCESS M Y Zaman, S Ferrero, D Perrone, L Scaltrito, N Shahzad and D Pugliese

012028 [Three phase six-switch PWM buck rectifier with power factor improvement](#) OPEN ACCESS M Z Khan, M M Naveed and D M A Hussain

012029 [Bulk etching of silicon wafer and development of a polyimide membrane](#) OPEN ACCESS M Aslam

012030 [Electrical characterization of Au/ZnO/Si Schottky contact](#) OPEN ACCESS M Asghar, K Mahmood, M Faisal and M A Hasan

012031 [Growth and interface properties of Au Schottky contact on ZnO grown by molecular beam epitaxy](#) OPEN ACCESS M Asghar, K Mahmood, F Malik and M A Hasan

012032 [High efficiency interleaved bi-directional ZVS DC-DC converter](#) OPEN ACCESS M Z Khan, M M Naveed and D M A Hussain

Vacuum Science and Technology

012033 [Nano-holes for vacuum applications](#) OPEN ACCESS V Ierardi, G Firpo and U Valbusa

012034 [Aluminium ultrahigh vacuum system for the 3 GeV TPS synchrotron light source](#) OPEN ACCESS G Y Hsiung, C C Chang, C L Chen, L H Wu, C M Cheng, C K Chan, Y C Yang, H P Hsueh, S N Hsu and J R Chen

012035 [Design and development of primary orifice plate flowmeter](#) OPEN ACCESS M Maqsood, J Ali, A Usman and M Farooq

Renewable Energy Technologies

012036 [Design, construction and evaluation of solarized airlift tubular photobioreactor](#) OPEN ACCESS A Bahadur, M Zubair and M B Khan

012037 [To investigate the surface properties for increasing efficiency of solar water heater](#) OPEN ACCESS A Hai and Qurat-ul-Ain ""537

012038 [Comparative analysis of mapping burned areas from landsat TM images](#) OPEN ""543 ACCESS A Mazher

012039 [An optimal design of coreless direct-drive axial flux permanent magnet generator for wind turbine](#) OPEN ACCESS D Ahmed and A Ahmad ""54;

012040 [Proposed applications with implementation techniques of the upcoming renewable energy resource, The Tesla Turbine](#) OPEN ACCESS M U S Khan, M I Maqsood, E Ali, S Jamal and M Javed ""567

012041 [Numerical climate modeling and verification of selected areas for heat waves of Pakistan using ensemble prediction system](#) OPEN ACCESS S Amna, N Samreen, B Khalid and A Shamim ""573

012042 [Hyperspectral image classification using Support Vector Machine](#) OPEN ""584 ACCESS T A Moughal

012043 [Modern improved and effective design of boundary layer turbine for robust control and efficient production of green energy](#) OPEN ACCESS M U S Khan, E Ali, M I Maqsood and H Nawaz ""593

012044 [Correlation of meteorological parameters and remotely sensed normalized difference vegetation index \(NDVI\) with cotton leaf curl virus \(CLCV\) in Multan](#) OPEN ACCESS A Ahmed, A Akhtar, B Khalid and A Shamim ""599

012045 [Energy conservation in developing countries using green building idea](#) OPEN ""5: 6 ACCESS A Rashid and I M Qureshi

012046 [Wireless electricity \(Power\) transmission using solar based power satellite technology](#) OPEN ACCESS M Maqsood and M N Nasir ""5; 5

Bio Interface

012047 [Remediation of explosive-polluted soil in slurry phase by aerobic biostimulation](#) ""623
OPEN ACCESS B Xin, M Shen, H Aslam and F Wu

012048 [Dynamic Corneal Surface Mapping with Electronic Speckle Pattern Interferometry](#) ""635
OPEN ACCESS S Iqbal and M M S Gualini

012049 [Design, modeling and simulation of MEMS-based silicon Microneedles](#) OPEN ""63;
ACCESS F Amin and S Ahmed

Plasma Science and Technique

012050 [Laser induced breakdown spectroscopy \(LIBS\) as a rapid tool for material analysis](#) ""654
OPEN ACCESS T Hussain and M A Gondal

012051 [Laser etching rates of sapphire glass using metal targets](#) OPEN ACCESS A H ""667
Hamdani, A Nasir, S Sarwar, A Ansar, R Akhter and M Aslam

012052 [Computation and modeling of Ionospheric Plasma Pressure for F₂ layer at Pakistan air space](#) ""672
OPEN ACCESS M A K Y Zai and K Mian