

1st International Conference on Advances in Engineering and Technology (ICAET-2018)

IOP Conference Series: Materials Science and Engineering
Volume 414

Quetta, Pakistan
2 - 3 April 2018

Editor:

**Muhammad Najam Khan
Abdul Malik Rehan Abbasi
Syed Mobasher Aftab
Faisal Mushtaq
Rehanul Haq Siddiqui
Muhammad Oasim Siddiqi**

**Saqib Siddiqui
Syed Abid Hussain
Syed Mohammad Ali Shah
Maqsood Ahmad
Mohammad Tariq**

ISBN: 978-1-5108-7196-0
ISSN: 1757-8981

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© (2018) by the Institute of Physics
All rights reserved. The material featured in this book is subject to
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2018)

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: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Table of contents

Volume 414

1st International Conference on Advances in Engineering and Technology (ICAET-2018)

2–3 April 2018, Baleli, Quetta 87300, Pakistan

Accepted papers received: 9 August 2018

Published online: 13 September 2018

Preface

[1st International Conference on Advances in Engineering and Technology \(ICAET-2018\).](#)

[Peer review statement](#)

Papers

[Effect of tempered glass fines in concrete at elevated temperature](#)

Iffat Siddique, Momina Rauf, Sadia Umer Khayam, Muhammad Alamgeer Shams and Husnain Faisal.....1

[Thermodynamic investigation of M-cycle assisted open-cycle desiccant air conditioning systems](#)

Hassan Niaz, Muhammad Sultan, Zahid Mahmood Khan, Muhammad Hamid Mahmood and Yasir Niaz.....8

[Fluidized bed heat exchange capacity of Alumina, coal-char and bio-char solids](#)

F Mushtaq, I Ullah, I Khan, S K Sami, W Alam, M Sadiq, Z Tariq and A Jaan.....14

[Investigation of carbon based adsorbents for the development of thermally-driven adsorption cooling systems](#)

Faizan Shabir, Muhammad Sultan, Redmond R. Shamshiri and Zahid M. Khan.....24

[Effect of Brick Dust on Strength and Workability of Concrete](#)

Muhammad Nasir Ayaz Khan, Nabeel Liaqat, Ibrar Ahmed, Abdul Basit, Muhammad Umar and Muhammad Aftab Khan.....30

[Study the effects of epoxy/tri functional mercaptan resins structure based PDLC films](#)

M Ellahi, H Ullah, M F Ali and N N Panezai.....36

[Use of slate in making lightweight concrete.](#)

Muhammad Aftab Khan, Ibar Ahmed, Abdul Basit, Muhammad Umar, Nabeel Liaqat and Muhammad Nasir Ayaz Khan.....44

[Effect of brick dust and lime powder on the performance of plain cement concrete](#)

Abdul Basit, M Aftab Khan, Ibrar Ahmed, M Nasir Ayaz Khan and M Umar.....51

[Development of Textile Based Strain Sensor from Polypyrrole](#)

Abdul Malik Rehan Abbasi, Zamir Ahmed Abro and Syed Kamran Sami.....57

[Features of Convective heat transfer on MHD peristaltic movement of Williamson fluid with the presence of Joule heating](#)

Naheeda Iftikhar, Abdul Rehman and Muhammad Najam Khan.....63

[SWOT analysis of institutional framework for engineering diplomas in technical and vocational education and training system in Pakistan](#)

Aziz Ahmed and A H Khan.....89

[Investigation of raw materials for cement industry of Upper Hunza, Gilgit-Baltistan, Pakistan.](#)

Zahid Hussain, Naseer Muhammad Khan, Syed Mohammad Ali Shah, Faheem Nawaz, Muhammad Najam Khan, Sajjad Hussain and Ishaq Ahmad.....98

[Scarcity of water resources in rural area of Quetta District; challenges and preparedness](#)

Zainuddin Kakar, Syed Munawar Shah and Maqsood Ahmad Khan.....107

[Air Pollution Deterministic Index Modeling: Application in Quetta, Pakistan](#)

F Akhtar and S Shahkhan.....119

[Empirical SPT-CPT correlation for soils from Lahore, Pakistan](#)

Mehtab Alam, Muhammad Aaqib, Shamsheer Sadiq, Saeedullah Jan Mandokhail, Muhammad Bilal Adeel, Maqsood-ur-Rehman and Nawaz Ali Kakar.....126

[Process optimization of microwave assisted co-pyrolysis of coal and oil palm shell blend with carbon surfaces](#)

F Mushtaq, S K Sami, R Mat and F N Ani.....132

[Role of masonry infill wall on the seismic behavior of typical four-storey building in Pakistan](#)

A Ahmed, A Ali, Hammaad Khalid and M Ahmad.....151

[Rainwater harvesting, a measure to meet domestic water requirement; a case study Islamabad, Pakistan.](#)

O Rashid, F M Awan, Z Ullah and I Hassan.....157

[Development of nanofibers based neuropathic patch loaded with Lidocaine to deal with nerve pain in burn patients](#)

S Abid, T Hussain, A Nazir, N Khenoussi, A Zahir and S Riaz.....166

[Development of antibacterial fibers and study on effect of guar-gum addition on properties of carboxymethylcellulose \(CMC\)/alginate fibers](#)

S Riaz, S Malik, T Hussain, M Ashraf, F Iftikhar, A Younus, S Abid and A Zahir.....172

[Identification of brittle and ductile zones in sandstone reservoir using well log analysis; a case study, Southern Indus Basin, Pakistan](#)

I Khan, A Ismail and I Ali.....179

[Extraction of oil from algae for biodiesel production, from Quetta, Pakistan](#)

Rizwan Ullah Baig, Abeera Malik, Khadim Ali, Sehar Arif, Sadam Hussain, Mazhar Mehmood, Kamran Sami, Ali Nawaz Mengal and Mohammad Najam Khan.....190

[Strategies to Manage Aquifer Recharge in Balochistan, Pakistan: An Overview.](#)

Syed Mobasher Aftab, Rehanul Haq Siddiqui and Muhammad A Farooqui.....197

[Preparation of Phase Change Material on Polyester/Cotton Blend](#)

Sidra Saleemi, Abdul Malik Rehan Abbasi, Zamir Ahmed Abro, Nadir Ali Rind and Fu-Jun Xu.....219

[Extraction and Quantification of Chlorophyll from Microalgae *Chlorella* sp.](#)

M Amin, P Chetpattananondh, M N Khan, F Mushtaq and S K Sami.....224

[Effect of Steel Confinement on Axially Loaded Short Concrete Columns](#)

H Farooq, M Usman, K Mehmood, M S Malik and A Hanif.....231

[Comparative analysis of heat transfer coefficient for wood and non-wood pulp fiber](#)

G Khan, S N Kazi, M A Syed, S Nasar and A Kakar.....240

[Numerical Evaluation of Slope Stability measures: A Case Study of Birham Landslide, Murree, Pakistan.](#)

Shamsher Sadiq, Urwah Khan, Mehtab Alam, Saeedullah Jan Mandokhail, Maqsood-ur-Rehman, Nizamani Zubair Ahmed and Ayaz Ikram.....245

[Engineered Silica Nanoparticles and silica nanoparticles containing Controlled Release Fertilizer for drought and saline areas.](#)

Ayesha Mushtaq, Nelofer Jamil, Sabeena Rizwan, Fazeela Mandokhel, Musarrat Riaz, G L Hornyak, M Najam Malghani and M Naeem Shahwani.....252

[Domestic three stage water-treatment option for harvested rainwater in water-stressed communities](#)

M H Nawaz and M A Baig.....259

[In-plane shear strength analysis of Basalt Fiber-Reinforced Epoxy Laminates with Biowaste Catalyst Free Carbon](#)

A N Mengal, S Karuppanan, Z N Qaisarani, M Siddique, M Kashif and M Najam.....269

[Modeling and Simulation of a 100 MW Concentrated Solar Thermal Power Plant Using Parabolic Trough Collectors in Pakistan](#)

K Liaqat, M Anss, A Ali and A Nawaz Mengal.....275

[Hydrothermal Alteration in Porphyry Cu-Mo-Au Mineralizations of the Chagai Arc, Balochistan, Pakistan](#)

Rehanul Haq Siddiqui, Syed Mobasher Aftab and Asif Hanif Chaudhry.....282

[Efficiency and Cost Analysis of Power Sources in Impressed Current Cathodic Protection System for Corrosion Prevention in Buried Pipelines of Balochistan, Pakistan](#)

Muhammad Saddam Khan, Faizullah Khan Kakar, Surat Khan and Syed Owais Athar.....293

[Stability Analysis of Flood Bunds: A Study on Geotechnical Health Evaluation of Embankments](#)

Sumayya Noshin, Mehtab Alam, Shamsheer Sadiq and Saeedullah Jan Mandokhail.....303

[Effect of the confining method on the cyclic undrained behaviours of sand](#)

Saeedullah Jan Mandokhail, Khawer Rehman, Zafar Baloch, Shamsheer Sadiq and Marjan Gul Kakar.....311

[River Flow Dynamics with Two-dimensional Shallow-water Equations](#)

Khawar Rahman and Saeedullah Jan Mandokhail.....317

[Potential Effect of Sugar Mill waste water as Substrate for Bio-Electricity Generation using Laboratory Scale Double Chamber Microbial Fuel Cell](#)

M Siddique, A S Jatoy, M H Rajput, S A Soomro, S Aziz, F Mushtaq, G Khan, M A Abro, M Najam Khan, A K Shah and S K Sami.....321

[Effective use of Enzyme Zymase for Enhancement of Ethanol Production Couple with Parametric Effect](#)

M Siddique, AS Jatoy, MH Rajput, MN Khan, AN Mengal, S Aziz, SA Soomro, F Mushtaq, A Shah and SK Sami.....329

[Solar Based Smart Irrigation System Using PID Controller](#)

Shehzar S Sheikh, A Javed, M Anas and Faisal Ahmed.....337

[Human Machine Interface Glove Using Piezoresistive Textile Based Sensors](#)

Surjeet Kumar, M Junaid Sultan, Anayat Ullah, Syed Zameer, Saqib Siddiqui and Syed Kamran Sami.....345

[Trend analysis in precipitation at individual and regional levels in Baluchistan, Pakistan.](#)

Erum Aamir and Ishitaq Hassan.....351

[Historical and Future Climatological Drought Projections Over Quetta Valley, Balochistan, Pakistan](#)

Imran Hameed Durrani, Shahzada Adnan and Syed Mobasher Aftab.....365

[Impact and Ratio of Lead in Ambient Air from Vehicular Emission in Quetta Valley, Pakistan.](#)

M Hussain, F Akhtar and S Shah Khan.....379

[Simulation of Proton Exchange Membrane Fuel Cell by using ANSYS Fluent](#)

Asifa Awan, Mahmood Saleem and Abdul Basit.....389

[China-Pakistan Economic Corridor; Prospects and Challenges for Balochistan, Pakistan.](#)

Muhammad Ahmed Farooqui and Syed Mobasher Aftab.....399

[Assessment of Fluoride in drinking water and its correlation with different physicochemical parameters in the selected areas of Quetta, Pakistan](#)

N Panezai, M Ellahi and H Ullah.....412

[Electromagnetic shielding effectiveness of high loft activated carbon web prepared by using acrylic waste](#)

M S Naeem, S Z Hassan, Z Javed, B Ramzan, A Rasheed, Z Ahmad and S Javed.....419

[Effect of material and stitching on tensile properties of woven fabrics](#)

Z Ahmad, B K Sirkova, S Ahmad, M S Naeem and S Z Hassan.....424

[Enhancement of anti-microbial activity by natural finishes prepared from herbal spices and wastage peel of fruits applied on textile substrate](#)

Syed Qutaba Bin Tariq, Qasim Siddiqui and Abdul Malik Rehan.....431