Open Access Article. Published on 29 July 2025. Downloaded on 1/23/2026 2:49:56 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

Dalton Transactions

An international journal of inorganic chemistry incorporating Acta Chemica Scandinavica

rsc.li/dalton

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 1477-9226 CODEN DTARAF 54(30) 11453–11758 (2025)

Cover
See Yongtao Tan *et al.*, pp. 11505–11515.

Image reproduced by permission of Yongtao Tan from *Dalton Trans.*, 2025, **54**, 11505.

Inside cover
See Xue-Zhi Song, Jing Liang, Xiao-Feng Wang, Zhenquan Tan *et al.*, pp. 11516–11524.

Image reproduced by permission of Xue-Zhi Song from *Dalton Trans.*, 2025, **54**, 11516.

PERSPECTIVE

11464

Addressing misconceptions in dithiocarbamate chemistry

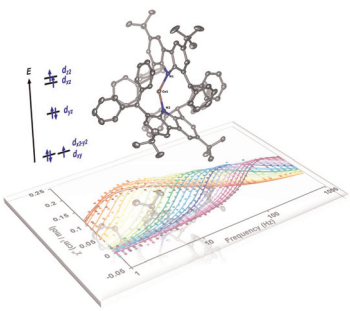
David Pugh and Graeme Hogarth*

COMMUNICATIONS

11495

Unquenched orbital angular momentum in quasi-linear two-coordinate transition metal complexes featuring sterically bulky carbazole ligands

Sadia Noor, Samantha Stegman, Jacob B. Palmer and Brian S. Dolinar*



ROYAL SOCIETY OF CHEMISTRY

View Article Online

GOLD OPEN ACCESS

EES Solar

Exceptional research on solar energy and photovoltaics

Part of the EES family

Join in | Publish with us

rsc.li/EESSolar

Registered charity number: 207890

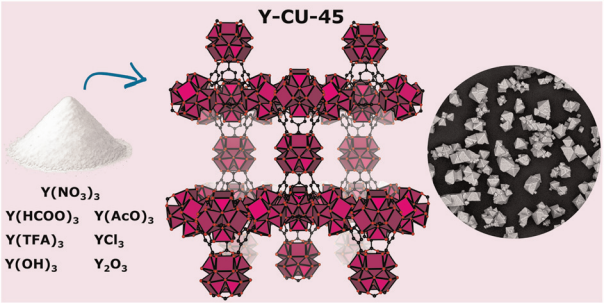
Open Access Article. Published on 29 July 2025. Downloaded on 1/23/2026 2:49:56 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

COMMUNICATIONS

11500

Exploring the synthesis of a rare-earth cluster-based metal–organic framework using alternative yttrium(III) precursors

Hudson A. Bicalho, Isabella Lopez-Delgado, Clara V. Diniz, Zoey Davis and Ashlee J. Howarth*

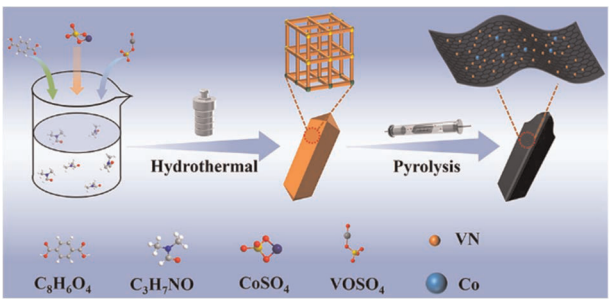


PAPERS

11505

Co-doped vanadium nitride/carbon composite fabricated from cobalt–vanadium metal–organic framework precursors for supercapacitors

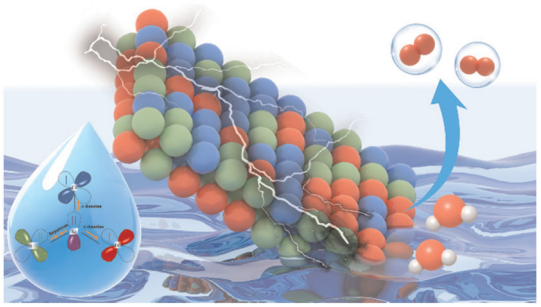
Yongtao Tan,* Fengwei Tuo and Yuan Zhang



11516

Electronic structure regulation in medium-entropy CoNiFeSe enabling efficient and durable oxygen evolution electrocatalysis

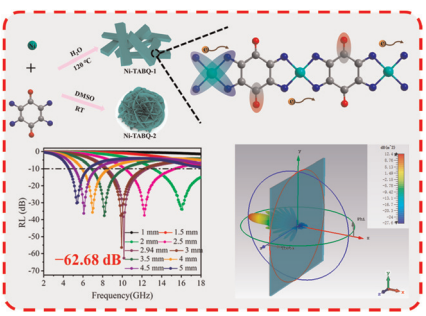
Yu-Xin Luan, De-Kun Liu, Yu-Xiang Chen, Xue-Zhi Song,* Jing Liang,* Xiao-Bing Wang, Wen-Qiang Sun, Yu-Lan Meng, Chen-Yu Shen, Ruichen Zhou, Jinxuan Liu, Xiao-Feng Wang* and Zhenquan Tan*



11525

Promoting electromagnetic wave absorption for conductive metal–organic frameworks through crystal morphology controlling

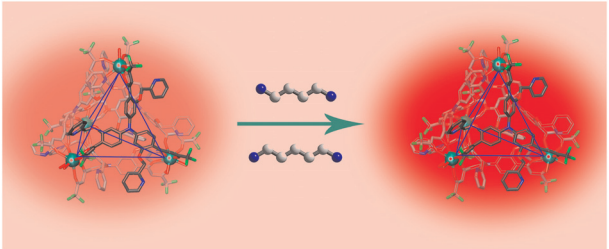
Xueling Wang, Xuan Zhang, Jiaqi Lu and Zhiliang Liu*



Open Access Article. Published on 29 July 2025. Downloaded on 1/23/2026 2:49:56 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

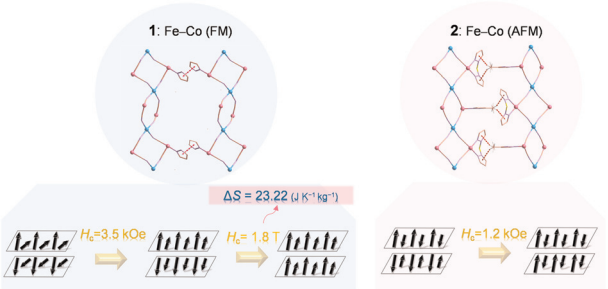
11533



An $Eu_4L^4{}_4$ tetrahedron with multiple recognition sites: a luminescent sensor for rapid and sensitive detection of biogenic amines

Yuan Yao, Li Li, Tongxi Zhou, Su Wang, Ying Qin, Chao Fan, Yuying Fu, Guoliang Liu* and Hongfeng Li*

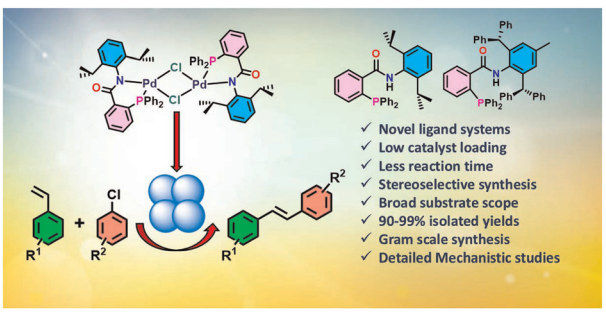
11542



Cyano-bridged $\{Fe_2Co\}$ assemblies showing metamagnetic transition and a magnetocaloric effect

Yu-Jing Gao, Ji-Peng Luo, Nan Yin, Quan Shi,* Yin-Shan Meng* and Tao Liu*

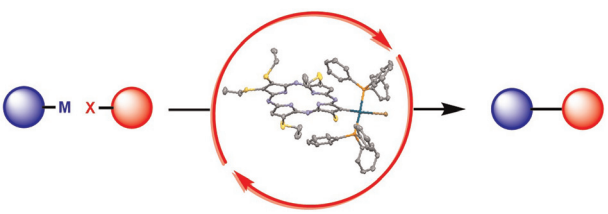
11551



Sterically hindered P,N-type amidophosphines $\{\{(o\text{-}PPh_2)C_6H_4\}C(O)NH(R)\}$: synthesis, transition metal chemistry, and catalytic activity in stereoselective Heck coupling of aryl chlorides

Gazal Sabharwal, Khilesh C. Dwivedi and Maravanji S. Balakrishna*

11563



Synthesis, electronic properties, structural studies, and catalytic activity of peripherally metalated β-η^1-Pd(II)-thioalkyl porphyrazine

Sandra Belviso,* Giuseppe Larotonda, Ernesto Santoro, Alessandro Santarsiere and Angela Tuzi

This journal is © The Royal Society of Chemistry 2025

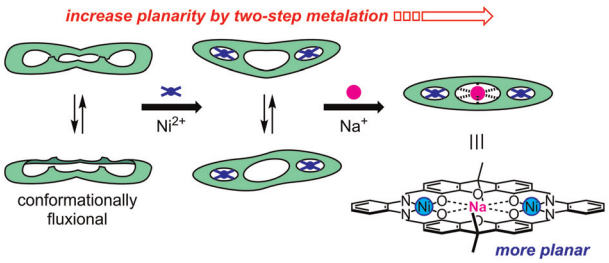
Open Access Article. Published on 29 July 2025. Downloaded on 1/23/2026 2:49:56 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

11573

Synthesis of a xanthene-based macrocyclic imine ligand and two-step planarization by metalation with Ni^{2+} and Na^{+}

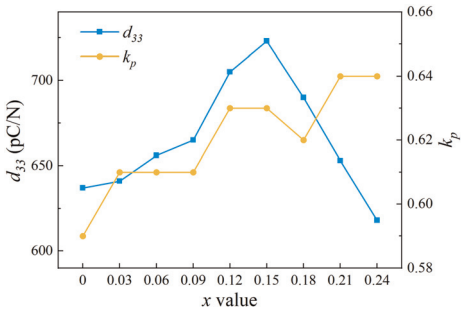
Shigehisa Akine,* Masato Nakano, Yoko Sakata and Seiji Tsuzuki



11581

Significantly improved Curie temperature and electrical properties of Sm-doped $Pb(Ni_{1/3}Nb_{2/3})O_3$-$PbZrO_3$-$PbTiO_3$ by introducing $Pb(Mg_{1/3}Nb_{2/3})O_3$

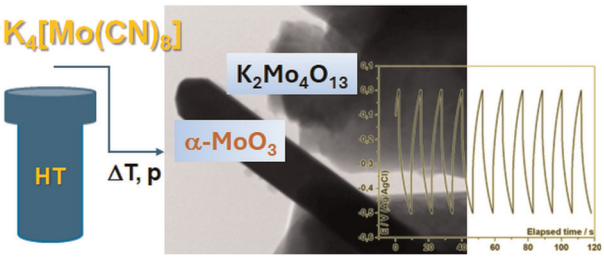
Haoran Yu, Liang Cao, Jiajia Wang, Jian Guo, Ji Zhang and Shan-Tao Zhang*



11588

Rare α-MoO_3–$K_2Mo_4O_{13}$ hybrid structures obtained *via* a single molecular precursor approach

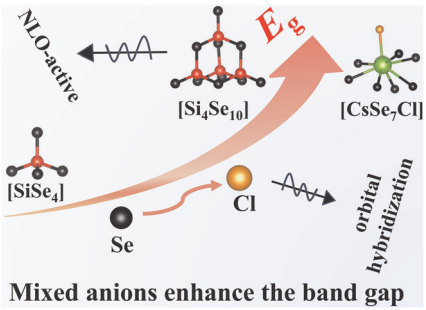
Loredana Preda, Diana Visinescu,* Elena Ionela Neacsu, Maria Marcu, Tanta Spataru, Cristian D. Ene, Silviu Preda, Vasile-Adrian Surdu, Bogdan Ştefan Vasile, Roxana Doina Truşcă, Adrian-Ionuţ Nicoară, Elena Mirabela Soare, Maria-Gabriela Alexandru* and Adelina-Carmen Ianculescu



11601

A wide band gap selenohalide $Cs_9Si_8Se_{20}Cl$ with unprecedented $[CsSe_7Cl]$ mixed anionic units

Guansong Zheng, Wang Zhao, Xiaoyu Wu, Hongshan Wang, Yinxia Du, Juanjuan Lu, Xiao-dong Zhou* and Junjie Li*



Open Access Article. Published on 29 July 2025. Downloaded on 1/23/2026 2:49:56 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

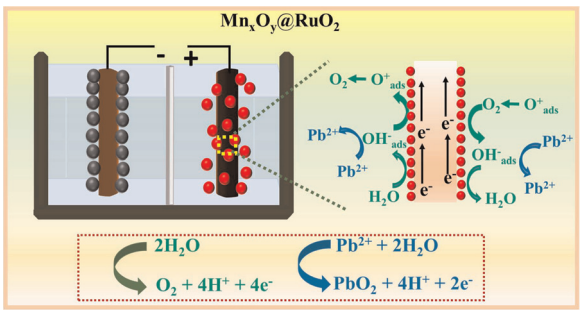
PAPERS

11607

Testing lanthanide(III) complex stability using Eu(III) luminescence – documenting complex formation and stability in any media

Vasileios Mouchtouris, Lea Gundorff Nielsen and Thomas Just Sørensen*

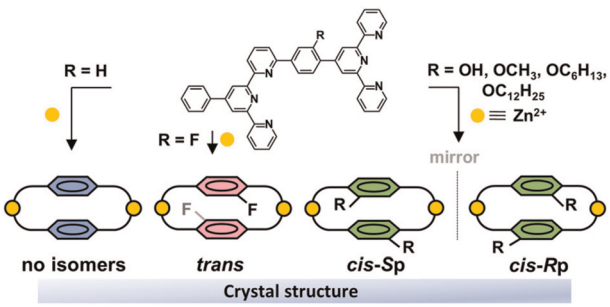
11621



Manganese MOF-derived ruthenium-doped Mn_xO_y catalyst for enhanced oxygen evolution reaction and energy-efficient lead recovery

Xiaoyue Wang, Rajapriya Andavar, Jiahong Xie, Wenli Liu, Yanzhi Sun,* Yongmei Chen, Yang Tang, Pingyu Wan and Junqing Pan*

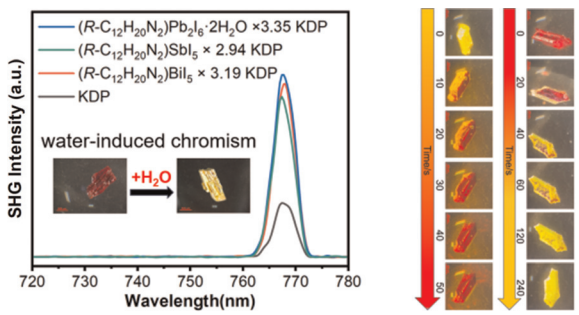
11632



Stereoisomers of metal–organic dimers induced by the steric constraint of dissymmetric terpyridine ligands

Jianjun Ma, Hao Yu, Ning Zhang, Junjuan Shi, Jiaqi Li, Kehuan Li, Ningxu Han, Houyu Zhang, Junmin Chang* and Ming Wang*

11638



Chiral organic hybrids for nonlinear optical applications and solvent-induced reversible red–yellow color change

Hongli Yu, Ruibin Hao, Dong Zhao, Lingyu Chi, Xianlong Zhao, Yibo Cui, Kunjie Liu, Jing Zhao* and Quanlin Liu*

This journal is © The Royal Society of Chemistry 2025

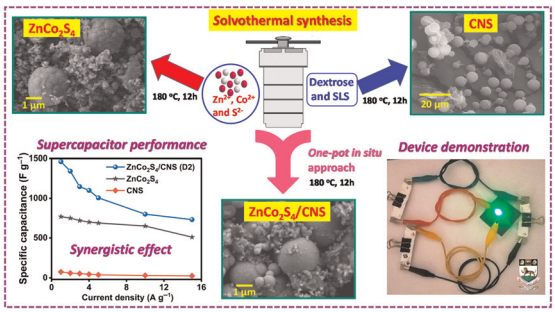
Open Access Article. Published on 29 July 2025. Downloaded on 1/23/2026 2:49:56 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

11644

One-pot *in situ* solvothermal synthesis of $ZnCo_2S_4$/carbon nanosphere composites: tuning carbon content for high-performance supercapacitor electrodes

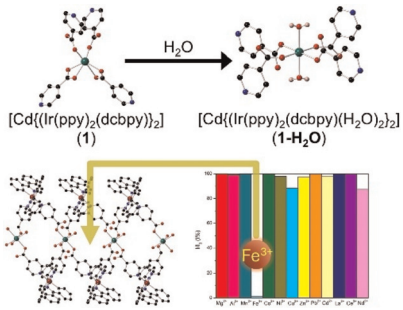
Raji Yuvaraja, Sankar Sarathkumar, Venkatesan Gowsalya, Sorna Pandian Anitha Juliet, Selvakumar Veeralakshmi, Siva Kalaiselvam, Gunniya Hariyanandam Gunasekar and Selvan Nehru*



11656

Coordination polymers with iridium(III) metalloligands: the effect of pore size upon luminescent cation sensing

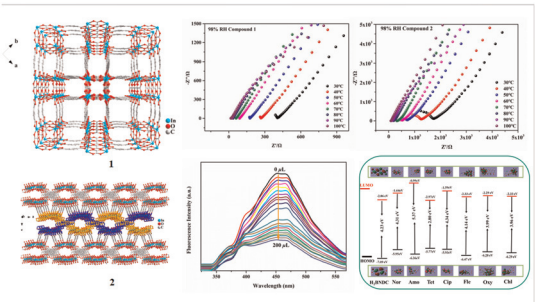
Zhejun Hong, Pattara Siripanich, Oliver G. Stansfield, Christopher R. Hall, Timothy U. Connell* and Carol Hua*



11667

Solvent-induced framework interpenetration isomers and tuning of porosity of In-MOFs for efficient proton conduction and fluorescence sensing

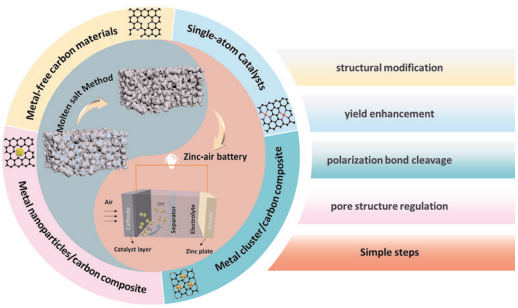
Guimei Huang, Zilian Li, Zhiyong Xing, Mengxia Ma, Chuanbin Fan, Shiming Li, Feng Guo* and Yuanji Teng*



11676

Molten salt strategy: a universal approach for constructing high-performance bifunctional carbon-based electrocatalysts for zinc–air batteries

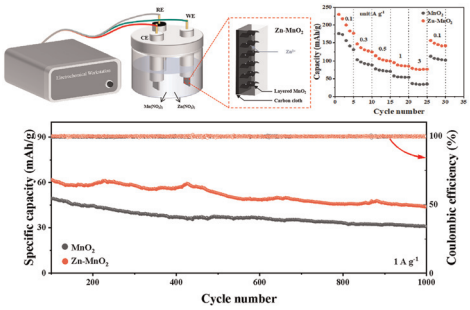
Zhongliang Li, Zhaoxin Liu, JianSheng Liu, Haojie Tong, Musen Du, Yannan Li,* Zhanli Chai* and Yan Zhao*



Open Access Article. Published on 29 July 2025. Downloaded on 1/23/2026 2:49:56 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

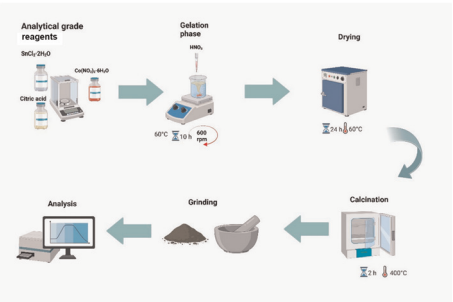
11694



Developing high-performance Zn^{2+}-pre-inserted MnO_2 *via in situ* electrodeposition for aqueous Zn-ion batteries

Xingpeng Li, Weidong Liu, Haofan Sun, Yonglei Chi, Duojie Gengzang, Guoheng Zhang, Haiyan Jiao, Qiong Chen, Peiyu Wang, Xiaoyan Deng, Bao Yang, Anren Ma, Shengguo Zhang and Wanjun Chen*

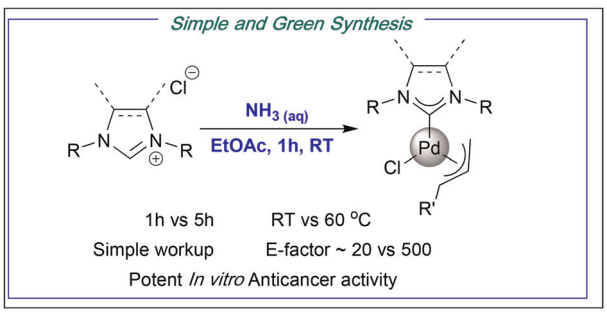
11702



Structural, optical, dielectric, and electronic properties of cobalt-doped SnO_2 nanoparticles for anode applications in energy devices

B. M. Alotaibi, Ahmed S. Ali, Ahmed M. Hassan and Hesham M. H. Zakaly*

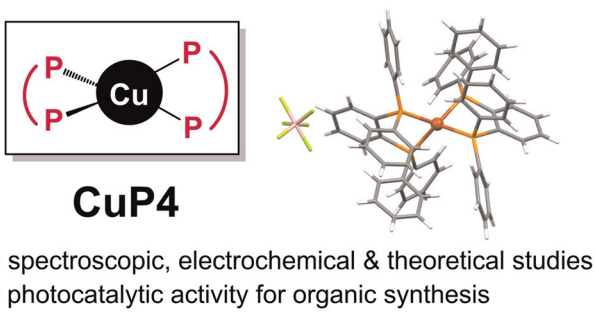
11720



Facile and green synthesis of [Pd(NHC)(η^3-R-allyl)Cl] complexes and their anticancer activity

Riku Saito, Pierre Arnaut, Benon Maliszewski, Laura Tripodi, Isabella Caligiuri, Flavio Rizzolio, Thomas Scattolin* and Steven P. Nolan*

11725



Homoleptic copper(I)–bisphosphine complexes as photoredox catalysts

Priya Saha, Ryunosuke Tomita, Takao Tsuneda, Pingyu Jiang, Tetsuya Taketsugu, Mingoo Jin and Dennis Chung-Yang Huang*

This journal is © The Royal Society of Chemistry 2025

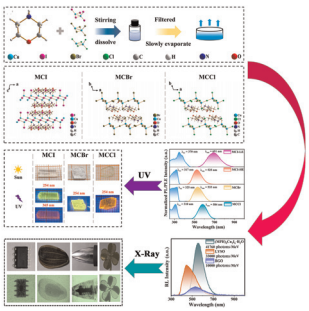
Open Access Article. Published on 29 July 2025. Downloaded on 1/23/2026 2:49:56 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

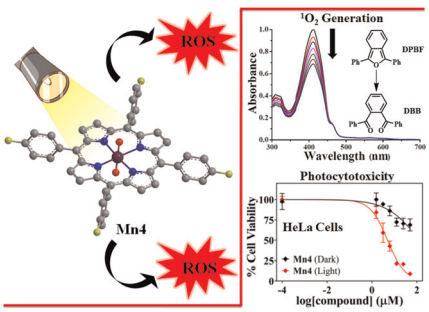
11732

Efficient single-phase tunable dual-color emission copper(I) scintillators for X-ray imaging

Yihao Wang, Zhengguang Yan,* Chen Li, Yiping Du and Jiawen Xiao*



11743

Mn(III) porphyrins as photosensitizers: structural, photophysical and anticancer studies

Bidisha Bora, Namisha Das, Jakia Parbin Sultana, Md Kausar Raza* and Tridib K. Goswami*