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CONTENTS

Review

Modelling and process design of Moving Bed Bioreactor (MBBR) for wastewater treatment — A Review

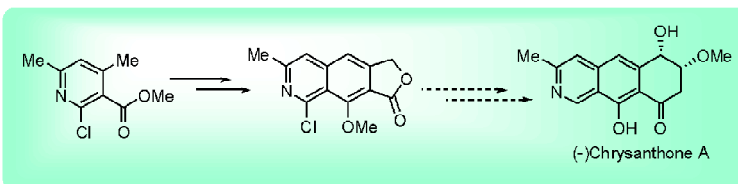
Supriyo Goswami and Debabrata Mazumder
pp. 215-229

Highlights

- The present paper highlights firstly the origin and significance of MBBR system with its historical backgrounds.
- Important milestones in its performance and mathematical models are also presented.
- Chronological developments of various mathematical models on biofilm and MBBR system with their relative features and critical remarks are also presented.
- Application of existing biofilm and MBBR models, advantages and limitations under certain conditions are also reviewed with various illustrative examples.
- This paper includes future scope of modelling and process design of a Moving bed hybrid bioreactor (MBHBR) system.

Synthetic studies directed towards (-)-Chrysanthone A: Facile synthesis of a tricyclic lactone intermediate

Biswajit Panda
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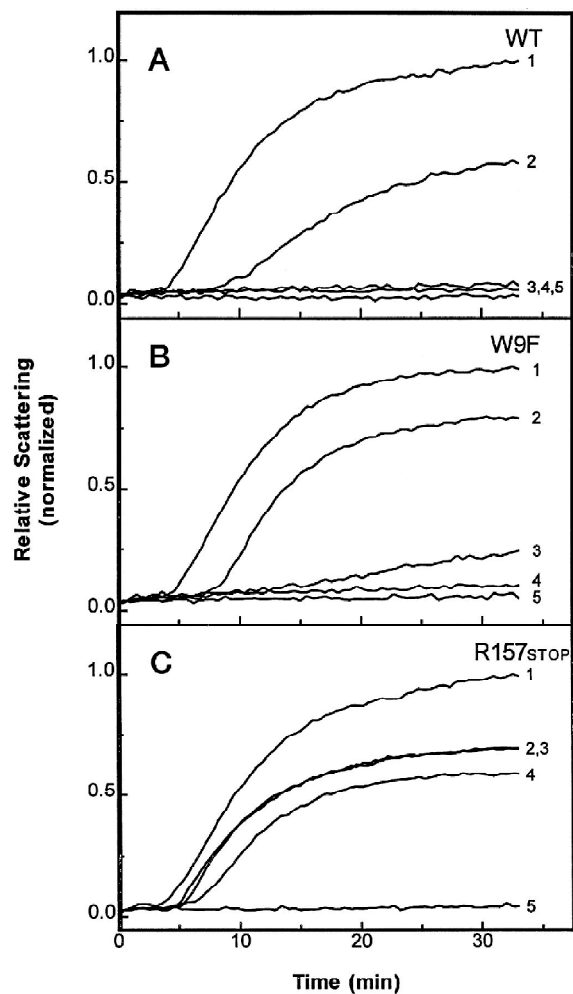


Eye lens protein α -crystallin and cataract

– A Review

Sudipa Saha

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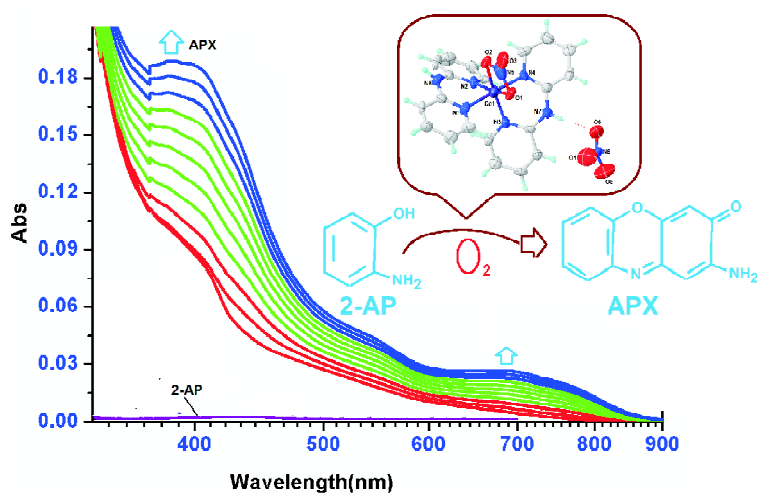


Inorganic Chemistry

Synthesis, spectroscopic depiction and phenoxazinone synthase activity by a cobalt(II) complex

Ajit Das, Anita Sahu, Prafulla Kumar Mudi, Suvendu Paul, Nagendranath Mahata and Bhaskar Biswas

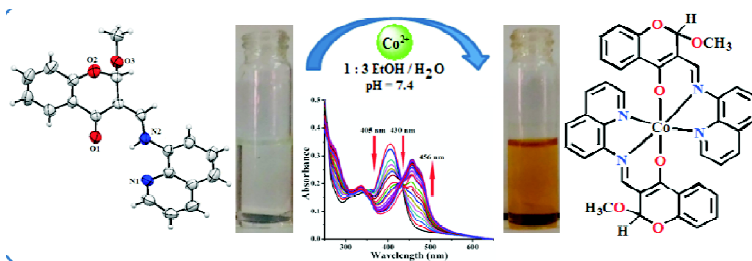
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A structurally characterised chromone-quinoline conjugate motif for colorimetric detection of Co^{2+} ions in aqueous medium

Abhishek Maji, Somenath Lohar, Arnab Sarkar, Siddhartha Pal and Pabitra Chattopadhyay

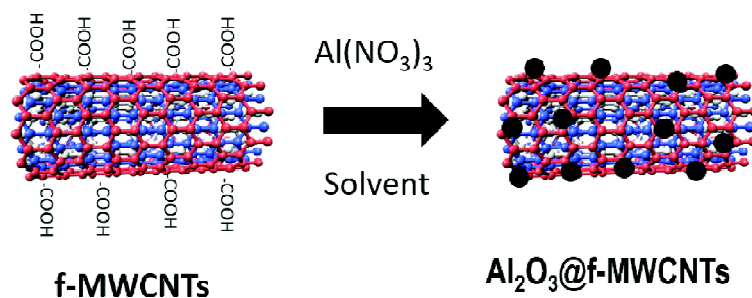
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Synthesis and hydrogen storage performance of Al_2O_3 nanoparticle decorated functionalized multi-walled carbon nanotubes ($\text{Al}_2\text{O}_3@f\text{-MWCNTs}$)

Madhavi Konni and Saratchandra Babu Mukkamala

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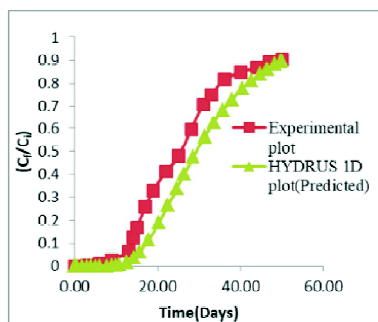


Physical Chemistry

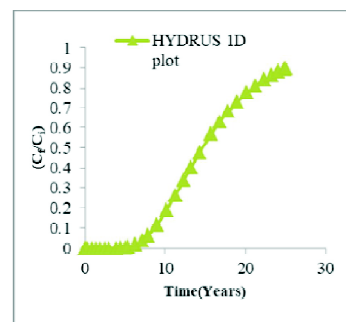
Physical and numerical modeling for assessing chromium migration and retention dynamics in clayey soil

Sumanta Rakshit, Supriya Pal, Soumya Bhattacharya, Mrinal Kanti Mandal, Hirok Chaudhuri and Chiranjit Maji

pp. 275-280



Experimental and HYDRUS 1D predicted Chromium BTCs in vertical column test for soil bed height of 10 cm

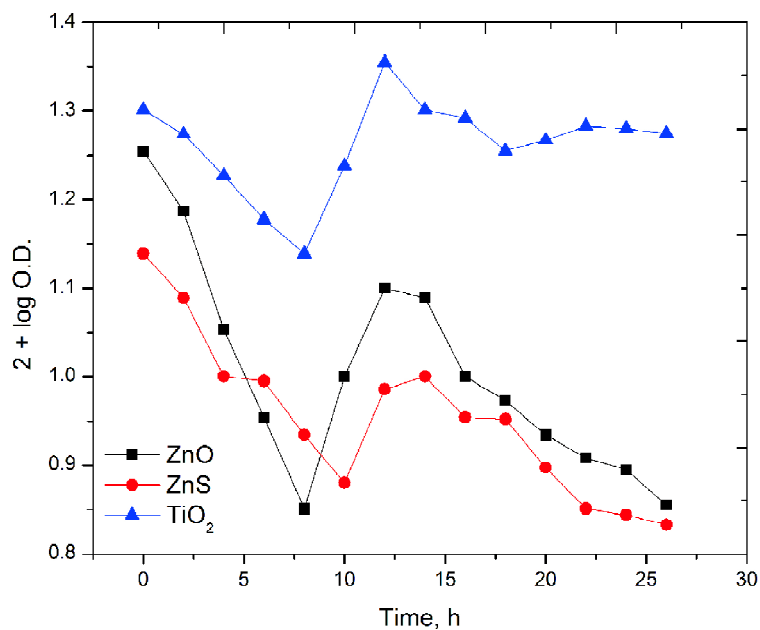


HYDRUS 1D predicted Chromium BTC through 1m vertical soil column to be used as liner material in waste containment structures.

Langmuir-Hinshelwood (L-H) adsorption isotherm and photodegradation of copper surfactants derived from long chain saturated fatty acid catalyzed by zinc oxide

Swati Sharma, Rashmi Sharma, Swati Goyal and Arun Kumar Sharma

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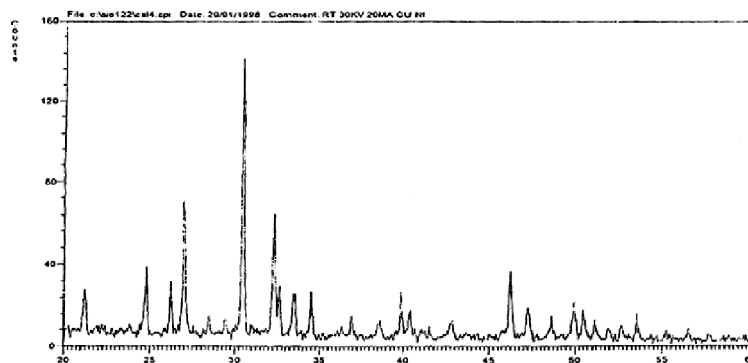


Organic Chemistry

Induction of mutation and development of a high L-tryptophan yielding *Bacillus subtilis*

Subhadeep Ganguly, Alok Ghosh Chaudhuri, Kunja Bihari Satapathy and Ajit Kumar Banik

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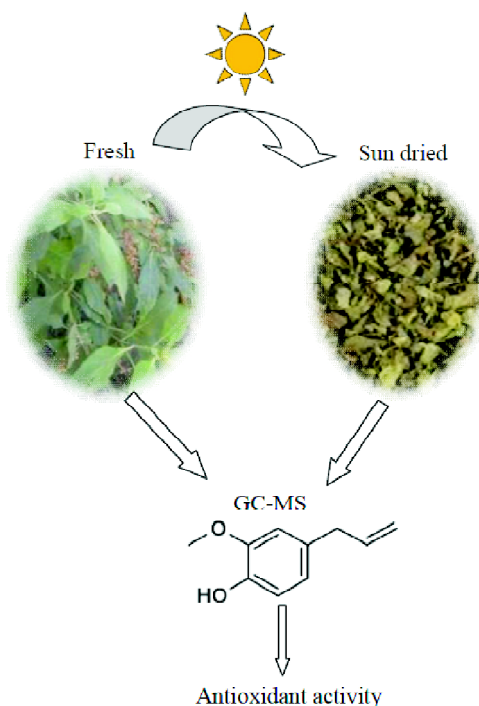


Analytical Chemistry

Evaluation of antioxidant potential and quality of volatile constituents of fresh and sun dried *Ocimum gratissimum*

S. Bhatt, M. Bisht, G. Tewari, C. Pande, O. Prakash and L. Rana

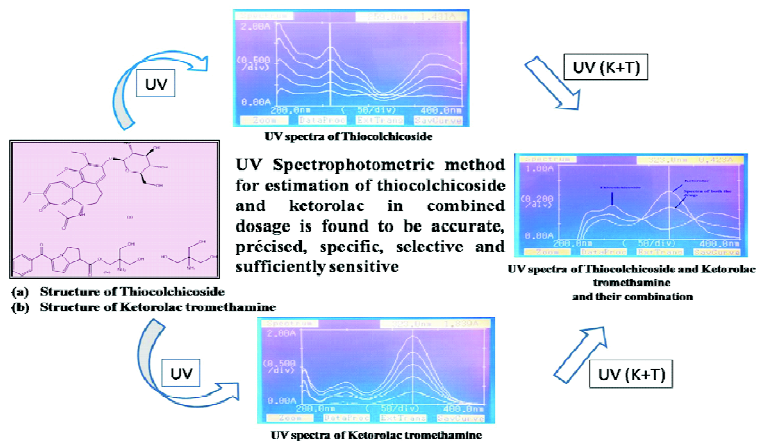
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Simultaneous estimation of thiolcolchicoside and ketorolac tromethamine using UV spectroscopy

Tripti Shukla, Sharad Prakash Pandey and Neeraj Upmanyu

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Non-aqueous potentiometric determination of drugs mefenamic acid and paracetamol-mefenamic acid in single and double component pharmaceuticals

Pradip P. Deohate

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