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A Study on Carbon-Carbon Coupling Reactions: Suzuki Cross Coupling and Heck Coupling

Sathya A., Arnet Maria Antony and Thiruvengadam J.

Abstract

Suzuki and Heck cross coupling reactions were carried out under homogenous conditions using tetrakis(triphenylphosphine) palladium(0) $[Pd(PPh_3)_4]$ and palladium acetate $[Pd(OAc)_2]$ with 1,3-bis(diphenylphosphino)propane (dppp) respectively as catalyst. Aryl halides were coupled with aryl boronic acid for Suzuki coupling and with ethyl acrylate for Heck coupling. The cross coupled products formed gave poor to very good yield. The structure of the products was confirmed by 1H NMR and LC-MS techniques.

Key words: Suzuki coupling, Heck coupling, $Pd(PPh_3)_4$, $Pd(OAc)_2$, dppp.

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Hypersaline Sulphate Reducing Bacteria: Their Tolerance and Ability to Remove Heavy Metal (Pb) from Solution

Latha. V

Abstract

Metal toxicity is of environmental concern due to transfer of accumulated metals to higher organisms through food chain. Metal- microbe interactions are in limelight, as scientists try to remove, recover and stabilize heavy metals from polluted environments. Bacteria are front runners in coping metal toxicity, exhibiting higher metal recovery. Sulphate Reducing Bacteria (SRB) are known to tolerate extreme environments and are natural metal detoxifiers. The objective was to evaluate the metal tolerance of Hypersaline SRB isolates. Isolation and enumeration of SRB was done using modified Hatchikian's media and serial dilution method. Isolates showing high metal tolerance to different metal stock solutions were selected for further experimentation. The growth of isolates was measured at 480nm and respiration was determined by Pachmayer's method. Both positive and negative controls were maintained throughout. The metal precipitates were analyzed using AAS. The results indicate that B₂ showed maximum stimulation of 225%(growth) and 159% (respiration) ; L₄ exhibited 180% (growth) and 232% (respiration) while Z₃ exhibited maximum stimulation of 576% (growth) and 340%(respiration)with Pb. Analysis of metal precipitated in particulate form on 14th day revealed that isolate L₄ could transfer 74% Pb(500ppm); while Z₃ could transfer 68% Pb (400ppm); However, B₂ was less tolerant at higher concentrations and could precipitate 56% Pb (500ppm). This emphasizes the metal tolerant ability of hypersaline SRB and their potential in precipitating metals from solutions followed by effective employability in managing metal toxicology.

Key words: Sulphate Reducing Bacteria (SRB), Lead, Metal precipitation, Metal recovery, Hypersaline environment.

Synthesis of Benzamide Derivatives *via* Transamidation using Carbonyl Diimidazole

Chetan Choudhary and A. Karthika

Abstract

The synthesis of amide plays a vital role in pharmaceuticals, natural products, and fine chemicals. There have been many reports on new and effective transamidation of amide in the past few years. Herein, we report a novel method for metal-free transamidation of amides using carbonyl diimidazole (CDI) at low temperature. The method is operationally-simple, and operates under mild conditions which gives desired amides in high yields. Considering the importance of amide in organic synthesis, drug discovery, and biochemistry, the reported methodology of transamidation would be more applicable in the laboratory.

Key words: Transamidation, *p*-chloro benzoic acid, aniline, *N*-butyl amine, CDI.

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Role and Developmental Support of Krishi Bhavan for the Empowerment of Farmers in Kerala: A Study from Kasaragod

N. Karunakaran and Resna. V. V

Abstract

Agriculture still plays an important role in the growth of the economy and agricultural extension is the driving force for the growth of agricultural productivity. Kerala has a well-defined agricultural system starting from the Grama Panchayaths to the state and is the most effective structure for agricultural extension. The extension system was modified as Krishi Bhavan with the aim of agricultural development. It undertakes various activities to promote scientific methods of cultivation, plant protection and supply of high yielding inputs to farmers. The study examined the role of Krishi Bhavan in promoting agricultural activities. The study revealed that farmers face great challenges like pests and diseases, higher cost of cultivation, lack of irrigation facilities and unusual climate change. Krishi Bhavan plays an important role in helping the farmers by implementing various schemes and programmes.

Key words: Krishi Bhavan, farmers, role and developmental support, Kerala.

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The Status of Marginalised Migrant Workers of India

Ramya B

Abstract

Are the migrant workers of India yet another group of people who remain unnoticed, vulnerable class? The research studies, NSSO statistics clearly reveal that every year in the modern India 6 million people migrate from one state to another. It has clearly doubled in the last two decades. The apathy of the state machinery is that the statistics do not convey the true living status of the migrant workers. Fundamental rights and state legislations guarantee all Indians the right to live in any part of India, seek education, employment and livelihood. This poses an interesting question on their exploitation, their basic demands and the efforts of the government to protect them.

The push and pull factors of migration are well known, the unavailability of rural employment and the attraction of the big towns and cities are the twin basic reasons for the migration to happen in India. The states that have maximum uncertainties such as shortage of rain, floods or unresolved social and political conflicts, high population density, poverty are the states that contribute to maximum outflow of migrants.

This paper explores the status of unorganised migrant workers who remain marginalised, seen but unheard, adding to the vistas of contemporary history of India.

Key words: Migrant workers, Marginalised, Migrants.

A Study on the Impact of Viral Marketing on Consumer Behaviour

Celesty Nilofer.N, Andrea Natasha Augustin and Solomon Jayakumar

Abstract

Viral marketing is modern tool for marketing the products, whereby the information regarding the product or the service is passed through the internet. Dan Zarella a social media scientist, he says that viral marketing is a marketing strategy in which the marketer creates a campaign that focuses on goal spontaneously send it to friends. As we find drastic changes in the field of marketing, viral marketing has emerged as more attractive than ever. Viral marketing is more effective than traditional marketing.

By circulating a structured questionnaire to 100 respondents the study makes an attempt to understand the perception of customers with impact on viral marketing. Our main findings were that a) viral marketing creates awareness among customers about the product or service but it does not impact on their purchasing decision, b) most of our respondents were neutral about the security issue, c) customers are more flexible or willing for market services when compared to products, d) most of the respondents tend to share the details of the product or service to the targeted customers, e) the study also shows us that the respondents are aware of viral marketing and they feel that it is more effective than traditional marketing.

Therefore this paper helps us to identify the factors driving viral marketing and the impact of viral marketing on consumer's behaviors. A sample size of 100 respondents was taken, and Google forms were circulated to gather primary data and the secondary data was obtained through journals, books and magazines.

Key words: Viral Marketing, Target customers, marketers, impact, respondents.

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Guidelines and Procedures of Intellectual Property Rights with reference to India

Priyadarshini Pillai

Abstract

Intellectual property is the creation of human mind, human intellect and hence called “Intellectual property”. The intellectual property is created by incorporating information intangible objects capable of multiplying in an unlimited number of times at different locations any where in world. The property is basically in the concept, idea thought and thereafter in the actual product work or process etc. Intellectual property is usually divided into two branches viz., Patents, Designs, Trade Marks and Geographical Indications which is also termed as “Industrial Property” and Copyright and Neighboring Rights. The development of any society directly depends on Intellectual Property Rights (IPR) and its policy frame work. Lack of IPR awareness resulted in the death of inventions, high risk of infringement, economic loss and decline of an intellectual era in the country. Thus, there is a dire need for dissemination of IPR information so as to boost indigenous inventions and developments in the field of research and technology. In foregoing section of this paper an effort is made to highlight various intellectual property rights in context to India with their related corresponding rules, regulations, their need and role in society. The present paper highlights various terms of IPR such as patents, trademarks, industrial designs, geographic indications, copyright, etc. with their corresponding rules, regulations, their need and role especially pertaining to Indian context.

Key words: Intellectual property rights, WIPO, patents, trademarks, copyright, industrial designs and geographic indications.

A Study on Perception of Youth towards Mobile Banking

Bhavana.K, Amrutha Davis and Solomon Jayakumar

Abstract

In this modern era, mobile banking has become one of the most essential services offered by banks. It helps in enhancing the customer satisfaction by offering uninterrupted services. Mobile banking has made the lives of the youth more convenient in making use of banking services. In the recent years, the use of internet banking has made a great impact on the banking services provided to customers. Major restrictions in this model were the access of computer and internet. Therefore, mobile banking has been introduced as a model of electronic banking to the customers where only a mobile phone is required. One of the main reasons for their superiority is the growth of mobile users in the economy. The services are available 24/7 and very convenient for mobile users to carry out their transactions efficiently. It mainly uses information technology to reach out to its customers. It also acts as a helping hand to the customers who are located at unbanked areas. It has mostly helped the customers to transact using their mobile which is less expensive when compared to the traditional access to banks. This paper helps in determining the youth's attitude towards innovations in banking sector an adoption of latest technology. A sample size of 150 respondents was selected and google forms were distributed in order to collect primary data and to draw findings, suggestions and conclusions.

Key words: Customer Experience, Growth of mobile users, Latest Technology adoption, Mobile Banking, Youth perception.

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