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Keyword :

Dragonfly, Damselfly, Diversity, Coastal area, Purba Medinipur

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ODONATA FAUNA IN ADJOINING COASTAL AREAS OF PURBA MEDINIPUR DISTRICT, WEST BENGAL, INDIA

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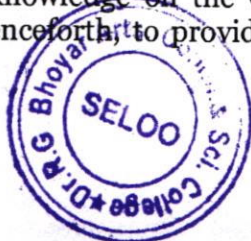
[Payra, A. & Tiple, A. D. 2019. Odonata fauna in adjoining coastal areas of Purba Medinipur District, West Bengal, India. *Munis Entomology & Zoology*, 14 (2): 358-367]

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KEY WORDS: Dragonfly, Damselfly, Diversity, Coastal area, Purba Medinipur

In biological studies insects occupy a vital position due to their rich diversity and significant role in ecological courses (Hölldobler & Wilson, 1990; Groombridge, 1992). Among the insect's, order Odonata (dragonflies and damselflies) regarded as ideal taxonomic group for the investigation of the environmental health and climate change (Subramanian et al., 2008; Hassall & Thomason, 2008). Odonates can be found in almost all kinds of freshwater habitats, from permanent running waters, lakes to small temporary rain pools. Their amphibious nature makes them well studied group of insects for assessing environmental changes in both the long term and short-term monitoring (Corbet, 1999). Odonata larvae reside in aquatic habitats, require very specific environmental condition to survive as they have a narrow range for temperature, oxygen levels, vegetation cover, microhabitats and water quality (Clausnitzer et al., 2009). While adult odonates shows high sensitivity with respects to the structure of their terrestrial habitats (Sheldon & Walker, 1998; Orr, 2006). As a consequence, odonates play vital role to bridge multiple trophic levels and act as a major linkage between freshwater and terrestrial food webs (Burkle et al., 2012; Hall et al., 2014).

Globally 6256 species in 686 genera of odonates have been reported, of which India known to represent 487 species, 27 Subspecies in 152 genera under 18 families. (Subramanian & Babu, 2017). Studies on the Odonata fauna of Southern parts of West Bengal were mainly carried out by Selys (1891); Laidlaw (1914); Fraser (1933, 1934, 1936); Ram et al. (1982); Srivastava & Das (1987); Prasad & Ghosh (1988); Mitra (1983, 2002); Srivastava & Sinha (1993); Gupta et al. (1995); Dawn (2014); Jana et al. (2014); Payra & Tiple (2016); Payra et al. (2017); Dwari et al. (2017). However, knowledge on the Odonata fauna of Purba Medinipur District is very fewer. Henceforth, to provide baseline data and to upgrade the



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Metal/Metal Oxide Nanoparticles: Toxicity, Applications, and Future Prospects

Ratiram G Chaudhary ¹, Ganesh S Bhusari ², Ashish D Tiple ³, Alok R Rai ⁴, Subhash R Somkuvar ⁵, Ajay K Potbhare ¹, Trimurti L Lambat ⁶, Prashant P Ingle ⁷, Ahmed A Abdala ⁸

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Abstract

The ever-growing resistance of pathogens to antibiotics and crop disease due to pest has triggered severe health concerns in recent years. Consequently, there is a need of powerful and protective materials for the eradication of diseases. Metal/metal oxide nanoparticles (M/MO NPs) are powerful agents due to their therapeutic effects in microbial infections. In this context, the present review article discusses the toxicity, fate, effects and applications of M/MO NPs. This review starts with an introduction, followed by toxicity aspects, antibacterial and testing methods and mechanism. In addition, discussion on the impact of different M/MO NPs and their characteristics such as size, shape, particle dissolution on their induced toxicity on food and plants, as well as applications in pesticides. Finally, prospective on current and future issues are presented.

Keywords: Metal oxide nanoparticles; callus poisoning; microbial assay; pest control; plant biotechnology; toxicity..

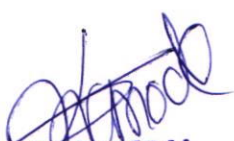
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REVIEW ARTICLE

Metal/Metal Oxide Nanoparticles: Toxicity, Applications, and Future Prospects

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Keywords: Metal oxide nanoparticles, toxicity, microbial assay, callus poisoning, pest control, plant biotechnology.

1. INTRODUCTION

Nanotechnology is a revolutionary technique that can resolve major problems faced by humans worldwide [1]. Novel applications of nanotechnology in energy generation, conversion and storage, optics, microelectronics, mechanical, and ceramics engineering are increasing day-by-day. Currently, metal/metal oxide nanoparticles (M/MO NPs) are gaining substantial attention in diverse fields of solid-state chemistry, owing to their unique physico-chemical properties [2, 3]. Nanomaterials (NMs) are being fabricated purposefully using numerous techniques, which exposed to the atmosphere with no safety measurement. Nanotoxicology is the study of NMs' toxicity, which is impacted by the NMs' small particle size, very large surface/volume ratio, as well as their ability to diffuse freely as compared to the bulky particles.

Several approaches, including chemical, thermal, physical and chemical vapored position, precipitation photo-deposition, sputtering, and pulsed electro-deposition, are used for the synthesis of M/MO NPs [4-9]. Various NPs are being already used in commercial applications, including food and agriculture, but they accumulate intracellularly and face difficulty in eliminating from living organisms and because of their toxicity, they could impact the ecosystem [10-13]. Therefore, the present review starts with an analysis of the noxious impacts of NPs on the environment and their contributions to cellular damage. The exposure to NPs through food and its impact are discussed. Applications of M and MO NPs on

agriculture are a growing field of research; the effect of different M and MO NPs on plants is analyzed. Further applications of M/MO NPs in pesticides are comprehensively discussed. Finally, conclusions and prospective on applications and impact of M/MO NPs are presented.

2. TOXICITY ASPECTS

M/MO NPs are heterogeneous in nature and their impact on living being rests on their size and shape other than the chemical behaviour of specific metal ion used [11]. Metals having a high dissolution rate are considered highly toxic, while other characteristics such as composition, concentration, morphology, particle dimensions, chemical reactivity, agglomeration, and dispersal directly affect their behaviour and interactions with surroundings [8]. Moreover, NPs liberated ionic species is among the main sponsors to noxiousness.

Moreover, surface charges dictate the interactions between NPs and cellular components. Aggregation helps particles to bond via the weak interactive forces and they are predominantly reliant on the charge, concentration and ingredients of the nearby environment. Agglomeration disturbs the bio-distribution plus interactions of NPs, when exposed to the cells. Agglomeration can be analysed by means of laser diffraction technique by measuring the *Brownian motion* in suspension and applying the *Stokes-Einstein* equation [12, 13]. The surface area and chemical composition of NPs are measured by *Brunauer-Emmett-Teller* (BET) adsorption-desorption behaviour under nitrogen. As the particle size declines, the relative surface area per unit mass inclines and as a consequence, the fraction of active atoms, those on the surface, increases, which can enhance toxic reactions [14]. Stable accumulation of NPs can remain energetic for a long time in the body. However, degradable NPs cause severe effects by releasing reactive oxygen species (ROS).

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Pachliopta aristolochiae, Common Rose

Assessment by: Rushbrooke, M. *et al.*



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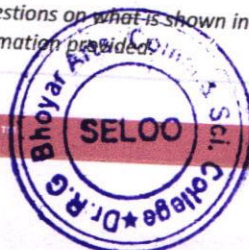
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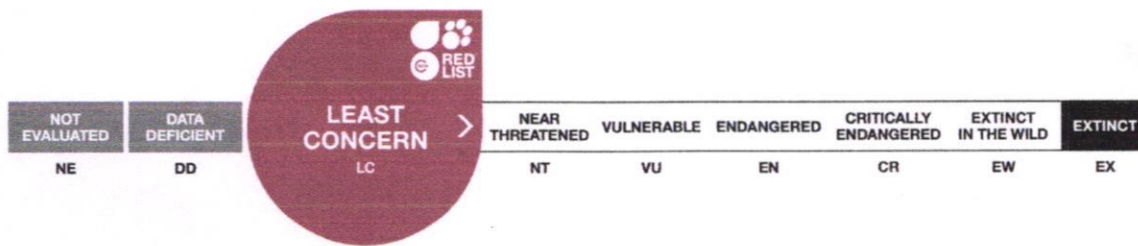

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Pachliopta hector, Crimson Rose

Assessment by: Fernando, E., Jangid, A.K., Alwis, C., Chowdhury, S., Jayasinghe, H.D., Kehimar, I., Kunte, K., Rajapakshe, S.S. & Tiple, A.D.



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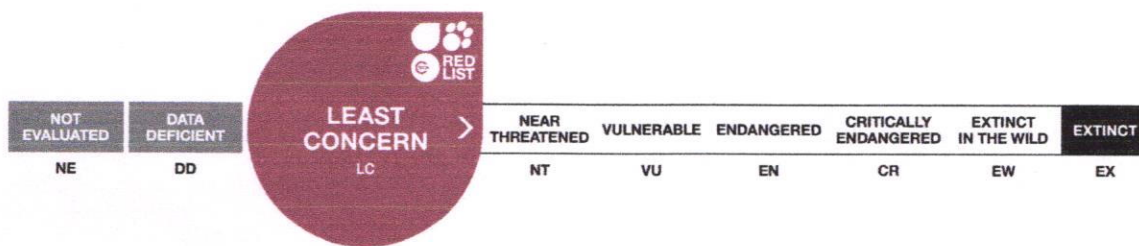
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Language: English

Pachliopta pandiyana, Malabar Rose

Assessment by: Fernando, E., Jangid, A.K., Kehimar, I., Kunte, K., Moonen, J. & Tiple, A.D.



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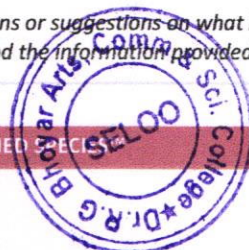
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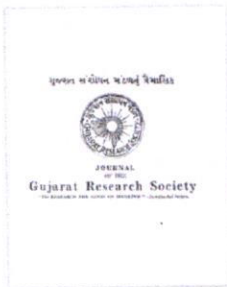


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Synthesis of 2-Aryl-3-[4/-Phenyl hiazolidinyl]-4-Oxo-Thiazolidines

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Abstract

2-amino-4-substituted phenyl thiazole (**1a-i**), 2-imine substituted phenyl-4-substituted phenyl thiazole (**2a-i**) 2-(4,-oxo-2 substituted aryl-Thiazolidinyl)-4/substituted phenyl thiazole. (**3a-i**) were prepared by the reaction of thiourea with different acetophenone with excellent yield. Elemental analysis, IR, ¹H NMR, ¹³C NMR & Mass spectral data established identification of the compounds (**3a-i**) was evaluated for their antimicrobial and antifungal activity.

Keywords: 4-oxo-thiazolidines, thioglycolic acid, spectral data, antibacterial activity, etc.

INTRODUCTION

Heterocyclic compounds have played an important role in the evolution of life, as dyes, drugs and are also used in many commercially important species and their analogs in which one or more ring carbons have been replaced by a heteroatom, such as nitrogen, oxygen, sulfur, phosphorus, silicon, a metal and so on. The most-common heterocyclic systems contain nitrogen or oxygen or both. 4-Thiazolidinones are derivatives of Thiazolidine with a carbonyl group at the 4-position substitution is possible at 2,3 and 5-position.[1-2] The nucleus is also known as wonder nucleus because it gives out different derivatives with all different types of biological activities and therefore thiazolidinone with varied substituent are being synthesized and as better medicinal agent in recent years 4-oxo-thiazolidine are the most extensively investigated class of compounds, which exhibit various biological activities antimicrobial, anti-inflammatory, anti HIV, antitubercular, antioxidant and analgesic.[3-8] 4-Thiazolidinones nucleus has occupied unique place in the field of pharmaceutical activities like antibacterial, anticancer, antiviral, cardiovascular, antitumor, CNS depressant.

RESULT AND DISCUSSION

In view of these observations, it was thought worthwhile to synthesize several compounds in which 2-amino, 4-substituted phenyl thiazole, 2-substituted phenyl imine 4-substituted phenyl thiazole, 2-substituted aryl, 3-substituted phenyl thiazole, 4-thiazolidinones have been linked with moiety.

The reaction sequence leading to the formation of desired heterocyclic compounds are outlined in **scheme-1**. The starting material 2-amino, 4-substituted phenyl thiazole (**1a-i**) was prepared by the reaction of substituted acetophenone with thiazole in presence of Br₂ -H₂O and ethanol. Synthesis of 2-amine substituted phenyl 4-substituted phenyl thiazole (**2a-i**) the substituted 2-[4-oxo-2-substituted aryl-Thiazolidinyl] 4-substituted phenyl thiazole (**3a-i**) by the reaction of 2-amine substituted phenyl, 4-substituted phenyl thiazole with thioglycolic acid and zinc chloride in presence of benzene the IR, ¹H NMR, ¹³C NMR, Mass spectra of the 2-substituted aryl-3-substituted phenyl thiazole 4-thiazolidinones.

Biological Studies

Biological Study of thiourea with different acetophenones and (**3a-i**) has been observed by using Norfloxacin and Griseofulvin as standards. The enhancement in biological activity of compound (1) as compared with the newly synthesized (**3a-i**) has been observed. The synthesized compounds were tested at 100ml concentration against staphylococcus aureus, E-coli, P. vulgaris, A. niger, B. subtilis, C. albicans for its antibacterial and antifungal screening as shown in **Table-I**.



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Table-I Antibacterial and Antifungal activities of compounds 3a-i.

Compounds	S. aureus	B. substills	E. coli	C. albicans	A. niger
3a	+	+++	+	++	++
3b	++	++	+++	+++	++
3c	+	++	+++	++	++
3d	—	+++	+	+++	+++
3e	+++	++	++	+++	++
3f	++	+++	—	++	++
3g	+++	—	+	—	+++
3h	++	+	+++	++	—
3i	++	—	+	++	+++

SM (streptomycin) and G F (Griseofulvin). The inhibition diameter in Mm (-) < 6, (+) 7-9, (++) 10-15, (+++) 16-22, (++++) 23-28.

EXPERIMENTAL

Melting points were taken in open capillary tubes and are uncorrected. IR spectra were run in KBr pellets on a perkin-Elmer 157 spectrometer. H1 NMR spectra were recorded in a CDCL3 on a Bruker- varia 300MHz FT NMR spectrometer using TMS as internal standard. Purity of the compounds was checked by TLC on silica gel G plates and the spots were located by exposure to iodine vapors'. The characterization data of the compounds is given in Table-II.

comp	R*	Mol. Formula	M. Pt (C0)	RF Value	% Yield	Analysis found(Cal) %		
						C	H	N
3a	H	C18H10N2S2O	165	0.91	83	74.1	4.46	7.84
						-74	-4.45	7.83
3b	2-OH	C18H12N2S2O2	172	0.72	79	70.5	4.75	7.45
						70.4	4.74	7.43
3c	3-OH	C18H12N2S2O2	181	0.75	75	70.8	4.75	7.45
						70.4	4.74	7.43
3d	4-OH	C18H12N2S2O2	188	0.82	58	70.5	4.75	7.45
						70.4	4.74	7.43
3e	2-NO2	C18H12N3S2O3	191	0.77	54	72.7	4.42	7.07
						72.69	4.41	7.06
3f	3-NO2	C18H12N3S2O3	192	0.54	62	72.7	4.42	7.07
						72.69	4.41	7.06
3g	4-NO2	C18H12N3S2O3	189	0.86	65	72.7	4.42	7.07
						72.69	4.41	7.06
3h	2-CL	C18H10N2S2OCl	157	0.75	49	73.4	4.21	6.55
						73.3	4.2	6.54
3i	4-CL	C18H10N2S2OCl	143	0.78	58	73.4	4.21	6.55
						73.3	4.2	6.54

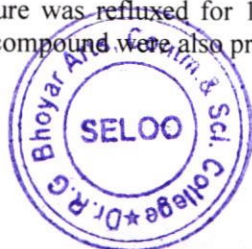
Method of synthesis

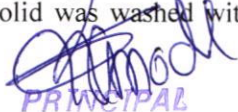
1. Synthesis of 2-amino, 4-substituted phenyl thiazole

A mixture of substituted acetophenone (0.1mole) thiourea (0.2mole) in 100ml of ethanol addition of Br₂-H₂O was refluxed for overnight. A resulting solid material reported which was crystallized from DMF similarly other compounds were also prepared.

2. Synthesis of 2-imine substituted phenyl 4-substituted phenyl thiazole

A mixture of compound I (0.01mole) and substituted benzaldehyde (0.01mole) on discovery in ethanol in presence of Glacial acetic acid. The reaction mixture was refluxed for 12-14hr and resulting solid was washed with ether and crystallized from DMF similarly other compounds were also prepared.




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3. Synthesis of 2-[4 oxo-2-substituted-aryl Thiazolidinyl] substituted phenyl thiazole

A mixture of compound 2(0.01mole) and anhydrous ZnCl₂ (one pinch) in dry benzene, thioglycolic acid (0.02mole) were added drop wise with stirring and mixture were kept from 3 days at room temperature refluxed for 12hr. the react mixture was filtered and poured on to ice the resulting solid was washed and recrystallized from DMF.

3a: (M.P.165 yield 83), IR(KBr); 2945 (C-H Aromatic stretch) 1791.8, 1713, 1641, 1520, 779 (C-S); H1NMR (300MHz DMSO) δ 9.53 (S1H NH) C13NMR (300MHz, DMSO-d₆), 14.2,13.1,13.6,23.0,37.9,38.2,34.5,39.4,40.0,58.5,76.8,7.3,111.8,159.1,126.2,137.3,160.2,162.1.

3b: (M.P. 172 yield 79), IR(KBr); 2945 (C-H Aromatic stretch),3275(OH of phenyl ring) 1639 & 1655 cyclic carbonyl ring,690 (C-S-C linkage of thiazolidinone ring),1152 (c-o str)3209 (N-H Stretch) 1791.8,1713,1641,1520,779(C-S); H1NMR(300MHz DMSO) δ 2.24,4.23,3.56 6.8-7.8 (M.8H Aromatic proton) 3.5 (s,2H,CH₂ Thiazolidine ring) C13NMR (300MHz,DMSOd6),14.1,13.0,13.62,23.1,37.9,38.0,34.1,39.2,40.1,58.3,72.3,7.3,111.5,159.1,126.0,137.1,160.2,162.1

3c: (M.P. 181 yield 75), IR(KBr); 2945 (C-H Aromatic stretch) 3272(OH of phenyl ring) 1637 & 1653 cyclic carbonyl ring,693(C-S-C linkage of thiazolidinone ring),1151 (c-o str)3208 (N-H Stretch) 1791.8,1713,1641,1520,779(C-S); H1NMR(300MHz DMSO) δ 2.24,4.21,3.54 6.8-7.8(M.8H Aromatic proton)3.4(s,2H,CH₂ Thiazolidine ring) C13NMR(300MHz,DMSOd6),14.2,13.1,13.2,23.0,37.8,38.1,34.2,39.4,40.1,58.5,76.5,7.3,111.3,159.2,126.1,137.32,160.2,162.2.

3d: (M.P. 188 yield 58), IR(KBr); 2945 (C-H Aromatic stretch) 3274(OH of phenyl ring) 1638 & 1650 cyclic carbonyl ring,691(C-S-C linkage of thiazolidinone ring),1150 (c-o str) 3207(N-H Stretch) 1791.8,1713,1641,1520,779(C-S); H1NMR(300MHz DMSO) δ 2.25,4.20,3.52 6.8-7.8(M.8H Aromatic proton)3.3(s,2H,CH₂ Thiazolidine ring)C13NMR(300MHz,DMSOd6),14.2,13.1,13.6,23.0,37.9,38.2,34.5,39.4,40.0,58.5,76.8,7.3,111.8,159.1,126.2,137.3,160.2,162.1.

3e: (M.P.191 yield 54), IR(KBr); 2945 (C-H Aromatic stretch)1791.8, 1713, 1641, 1520, 779(C-S); H1NMR(300MHz DMSO) δ 2.22,4.20,3.51 6.8-7.8(M.8H Aromatic proton)3.3(s, 2H,CH₂ Thiazolidine ring)(300MHz,DMSO-d₆),14.2, 13.1, 13.2, 23.1, 37.9, 38.1, 34.2, 39.4, 40.0, 58.1, 76.8, 7.3, 111.2, 159.0, 126.1, 137.3, 160.1, 162.1.


3f: (M.P.192 yield 62), IR(KBr); 2945 (C-H Aromatic stretch)1791.8, 1713, 1641, 1520, 779 (C-S); H1NMR(300MHz DMSO) δ 2.20,4.21,3.54m, 6.8-7.8(M.8H Aromatic proton) 3.3(s, 2H, CH₂ Thiazolidine ring) C13NMR(300MHz, DMSO-d₆), 14.1, 13.2, 13.0, 23.0, 37.9, 38.1, 34.5, 39.2, 40.0, 58.2, 76.8, 7.3, 111.2, 159.1, 126.2, 137.3, 160.2, 162.1.

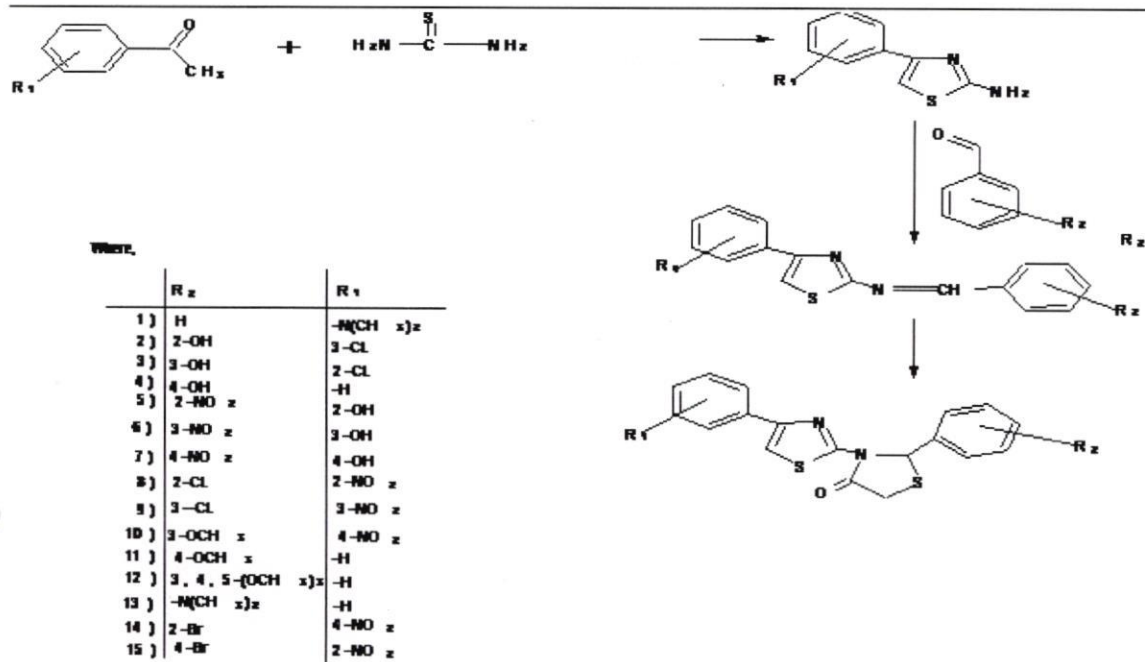
3g: (M.P.189 yield 65), IR(KBr) ; 2942 (C-H Aromatic stretch) 1791.8, 1713, 1641, 1520, 779 (C-S); H1NMR (300 MHz DMSO) δ 2.24,4.23,3.56 6.8-7.8 (M.8H Aromatic proton)3.4 (s,2H,CH₂ Thiazolidine ring) C13NMR(300MHz,DMSO-d₆),14.0,13.1,13.6,23.1,37.9,38.0, 34.5, 39.4, 40.0, 58.2,76.2,7.3,111.3,159.1,126.1,137.2,160.2,162.1.

3h: (M.P.157 yield 49), IR(KBr); 2944 (C-H Aromatic stretch) 1791.8,1713,1641,1520,779(C-S); 1689(C= O) of thiazolidinone ring H1NMR (300 MHz DMSO) δ 2.24, 4.23, 3.56 6.5-7.8 (M.8H Aromatic proton) 3.3 (s, 2H, CH₂ Thiazolidine ring)C13NMR(300MHz,DMSOd6),14.0,13.213.6,23.0,37.9,38.2,34.2,39.1,40.0,58.51,76.2,7.,111.3,159.1,126.2,137.3 ,160.2,162.1.

3i: (M.P.143 yield 58), IR(KBr); 2941 (C-H Aromatic stretch) 1791.8, 1713, 1641, 1520, 779 (C-S); H1NMR (300MHz DMSO) δ 2.24, 4.23, 3.56, 6.7-7.8 (M.8H Aromatic proton) 3.3 (s, 2H, CH₂ Thiazolidine ring) C13NMR (300 MHz, DMSO-d₆), 14.2,13.1, 13.5, 23.1, 37.9, 38.2, 34.5, 39.4, 40.1, 58.5,76.8,7.3,111.8,159.1,126.2,137.3,160.2,162.1.




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Scheme 1

CONCLUSION

Efficient methods for synthesis of (3a-i) with excellent yield have been developed. The result of this study indicate that present synthetic method is a simple efficient in expensive and easy synthesis of biologically active compound (3a-i) these compound showing good result tested at 100 mg Conc. against E-coli, S-aureus, P-Vulgaris, A-niger, C-albicans.


ACKNOWLEDGEMENT

The author are thankful to principal Dr. R.S. Bobhate, Vidya Vikas art, commerce and science college, Samudrapur and Head of Dept & Principal of Pravara Rural Engineering college, Loni for providing research facilities.

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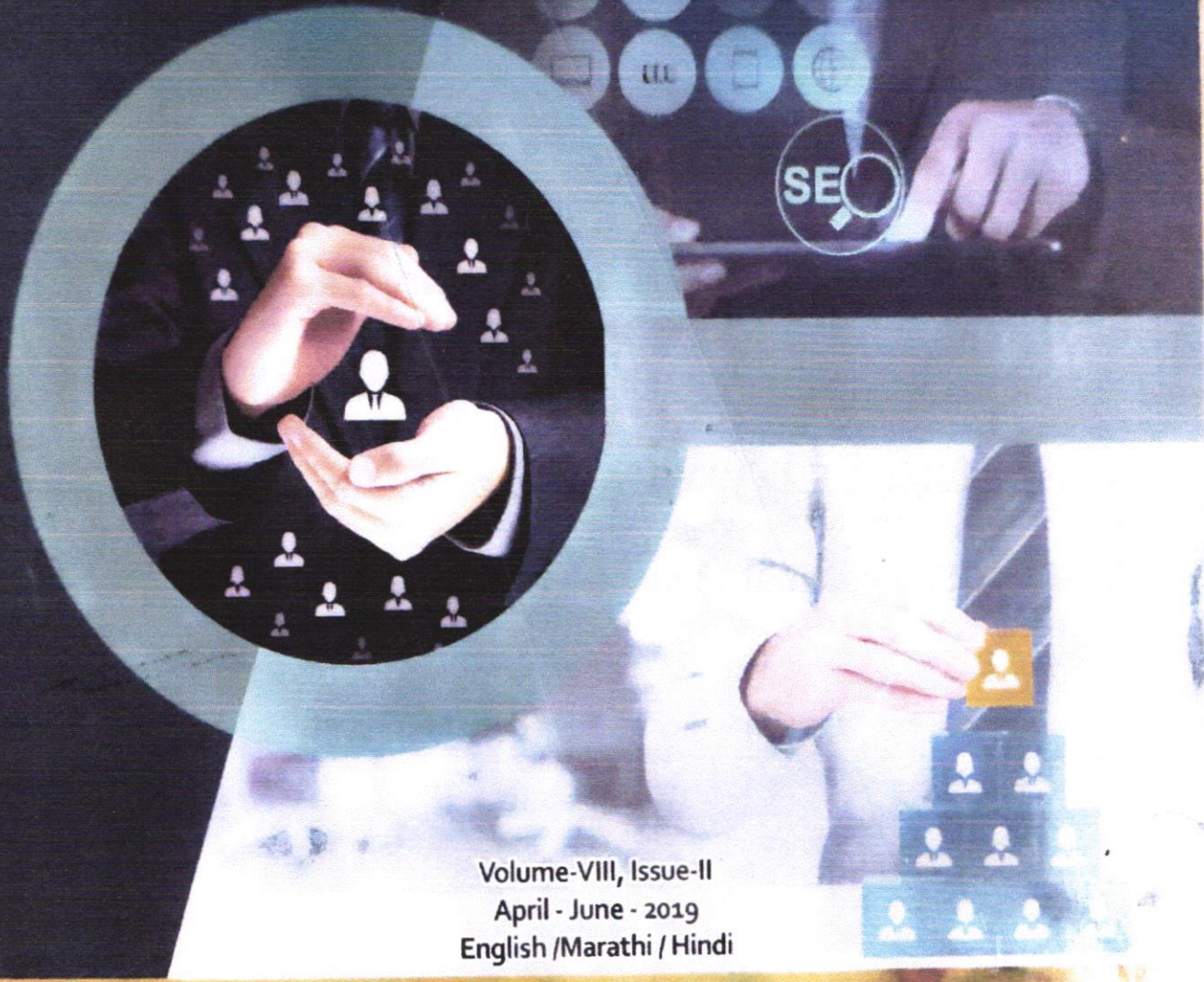


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7. Progression Development of Family Business: The Entrepreneurial Perspectives in India

Prof. Dr. Parag R. Kawley

Assistant Professor, Vidyabharti College, Seloo, Ta. Seloo, Dist. Wardha.

Abstract

Family businesses are an vital group of enterprises not simply inside the small and medium-sized division although too many of the world's huge enterprises are in family businesses. Although family businesses account for more than 90% of businesses in India, however there is acuity of awareness about their ways of organizing and managing business in these speedily changing times. Some studies approximate that only 40 percent of family enterprises carry on to the second generation. Family firms must have a long-term vision in administration their business. Progression development refers to the purposeful and formal progression that facilitates the express of ownership and management control. In adding together to raising consciousness, explicit consultancy, and mentoring that facilitates the transfer process, marketplaces that afford a proposal for bringing simultaneously probable buyers and sellers are a significant implement for development successful business transfers. Suitable financial goals of both the business and the family require to be ascertained and equilibrium between the two sets of objectives has to be achieved. The study is totally based on the secondary data; the practices measured contain to be national, the study has been of the experiences of the Small and Medium Enterprises.

Key Words: Progression Development Of Family Business, Transfer of Management, Ownership and Marketplace for the Business, Indian Scenario.

Introduction

Family businesses are an vital group of enterprises not simply inside the small and medium-sized division although too many of the world's huge enterprises are in family businesses. Despite a few statistics feed sufficient to map the occurrence of family businesses throughout the world, many studies conducted in different countries have definite the weight these businesses take in national economies. In the past, family businesses were regularly alleged to be the weakest type of enterprises; if they were unbeaten, it would be accomplished that such success was ascribed to their family character.





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05

ROLE OF E-COMMERCE & IMPROVEMENT OF MARKET DEVELOPMENT IN INDIA

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ABSTRACT

E-commerce is the most essential application of the new communication technology. The E-commerce has invaded the businesses in many ways. E-commerce has extremely compact the transaction costs related with purchase, sales, in commission, holding catalog and financial cost. New trends in IT facilitate this progression and point out the energetic future improvement of this new approach of doing business.

KEYWORDS: E-commerce, Benefits of E-Commerce, Improvement of Market Development, B2B, ERP.

INTRODUCTION

The appearance of the Internet during the world has been causative such a variety medium in doing business as well as people existence. In fact, Internet is the necessary requirement for the subsistence of E-commerce. Electronic commerce has been defined as the aptitude to execute communication connecting the replace of goods or services between two or more parties using electronic gear and tech-

niques. The explosion of E-commerce has formed new phenomena in our lifestyle particularly in shopping activities. Consumers can simply buy products or services like magazines and airlines tickets via Internet.

E-commerce is the most vital application of the new communication technology. Manufacturers, traders and consumers can now achieve the market more rapidly and get more information than they could ever before. The application of e-commerce during progress of web site enhances the probable global market and sales revenue, product, probable new customers, services and geographical areas. In term of non-financial reimbursement, e-commerce has extensively helped improving human resources and suitability, quality of services, customers' fulfillment and some other circuitous effects.

The essential of electronic commerce depends on the appraisal and assessment. To evaluate related data on e-commerce is essential, while it is not readily available. The available data are together by different agencies by numerous definitions and methodologies used by the collecting group. In the deficiency of consistent data, policy makers, governing bodies and business communities are not capable to take decisions that replicate the changes brought about by the e-commerce. By employing important and ideal data on e-commerce, the policy makers and researchers would be able significantly analyze the impact of e-commerce on labor market, market structures and implementation, changes in allocation of goods and services, customers preferences changes in global contest. It permits them to take well framed decisions about the policies and investments in e-commerce associated segment.

OBJECTIVES OF THE STUDY

1. To learning The Benefits of E-Commerce.
2. To learning a variety of Models in the E-Governance.



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Reading of Vikas Swarup's ♦ The Accidental Apprentice ♦ in the light of Socio-Cultural Problems in India


Mr. Vaibhao B. Pimpale, Dr. Hitendra B. Dhote

Abstract

In modern scholarly writers think about, a subject is the central theme of content treats. The foremost common understanding of the subject is an idea or point that's central to a story. Acclaimed author Vikas Swarup implies the new narrative techniques of the seven tests to throw light on some of Indias uncommon social and contemporary problems, whereas never losing locate of the character at the center of the story. The story interwoven around a shop assistant, Sapna Sinha, who is offered to become CEO of a big company in the event that she can pass an arrangement of seven tests. The theme of struggle of existence is the central feature of the thematic concerns in the novel. Also, Swarup emphasizes on many other arguable issues pertaining to the post modern Indian society through his novel, The Accidental Apprentice. It is obvious that Swarups critical thematic plea, his strong stresses on the complexities of the human nature and his fantastic delineation, seem to have added massively to the achievement of this novel, thus signifying his brilliance as one of the prominent writers of post modern India.

Keywords: Theme, Survival, Adaptation, Existence, Society.




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Reading of Vikas Swarup's The Accidental Apprentice in the light of Socio-Cultural Problems in India

Mr. Vaibhao B. Pimpale, Dr. Hitendra B. Dhote

Abstract

In modern scholarly writers think about, a subject is the central theme of content treats. The foremost common understanding of the subject is an idea or point that's central to a story. Acclaimed author Vikas Swarup implies the new narrative techniques of the seven tests to throw light on some of Indias uncommon social and contemporary problems, whereas never losing locate of the character at the center of the story. The story interwoven around a shop assistant, Sapna Sinha, who is offered to become CEO of a big company in the event that she can pass an arrangement of seven tests. The theme of struggle of existence is the central feature of the thematic concerns in the novel. Also, Swarup emphasizes on many other arguable issues pertaining to the post modern Indian society through his novel, The Accidental Apprentice. It is obvious that Swarups critical thematic plea, his strong stresses on the complexities of the human nature and his fantastic delineation, seem to have added massively to the achievement of this novel, thus signifying his brilliance as one of the prominent writers of post modern India.




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Title

Synthesis, Characterization & Antimicrobial Studies of Platinum (II), Palladium (II) And Fe (II) Complexes with Newly Synthesised Ligand p- Phenyl Isonitroso Acetophenone

Authors

W.A.Khan
R. D. Raut

Abstract

The Pt(II), Pd(II) and Fe(II) complexes of newly synthesised ligand p-Phenyl isonitrosoacetophenone (p-PhINAP) have been synthesized. The complexes of formula Pt(p-PhINAP)₂, Pd(p-PhINAP)₂ & Fe(p-PhINAP)₂ were investigated by element microanalysis for C,N,H,M. Infrared Spectra (IR), Proton Nuclear Magnetic Resonance Spectra (HNMR) and Magnetic properties. Based on spectral data, complexes appear octahedral geometry. The antimicrobial activity of the complexes against the microbes were higher than that of ligand p-Phenyl isonitrosoacetophenone.

Key Words

Pt(p-PhINAP)₂, Pd(p-PhINAP)₂, Fe(p-PhINAP)₂, octahedral geometry, HNMR and antimicrobial activity.

Cite This Article

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Synthesis, Characterization & Antimicrobial Studies of Platinum (II), Palladium (II) And Fe (II) Complexes with Newly Synthesised Ligand p- Phenyl Isonitroso Acetophenone

W.A.Khan & R. D. Raut

Department of Chemistry, J. B. College of Science, Wardha,

Department of Chemistry, J. B. College of Science, Wardha.

ABSTRACT:

The Pt(II), Pd(II) and Fe(II) complexes of newly synthesised ligand p-Phenyl isonitrosoacetophenone (PhINAP) have been synthesized. The complexes of formula $Pt(p\text{-PhINAP})_2$, $Pd(p\text{-PhINAP})_2$ & $Fe(p\text{-PhINAP})_2$ were investigated by element microanalysis for C,N,H,M. Infrared Spectra (IR), Proton Magnetic Resonance Spectra (HNMR) and Magnetic properties. Based on spectral data, complexes appear octahedral geometry. The antimicrobial activity of the complexes against the probes were higher than that of ligand p-Phenyl isonitrosoacetophenone.

Key word: $Pt(p\text{-PhINAP})_2$, $Pd(p\text{-PhINAP})_2$, $Fe(p\text{-PhINAP})_2$, octahedral geometry, HNMR and antimicrobial activity.

Introduction :

Coordination chemistry is undoubtedly the most active research area in inorganic chemistry. Several coordination complexes have been synthesized and investigated during the past few decades. Ever since the importance of coordination phenomenon in biological processes was realized, lot of metal containing coordination compounds have been synthesized and studied to realize the role of these ligands in biological systems, they also contribute to the development of new metal-based chemotherapeutic agents. Transition metal complexes of oxime have been the most widely studied co-ordination compound in the past few years due to their unusual magnetic properties, novel structural feature and relevance to biological system[1-3]. With significant development in the field of biological activity of metal chelates plays vital role in the causes and treatment of Cancer[4,5]. The ligand p-bromoisoinitrosoacetophenone (p-BrINAP) and p-iodoisoinitrosoacetophenone (P-IINAP) have also been studied for few transition metals[6,7].

However, structural studies of the complexes of transition metals with p-phenyl isonitroso acetophenone have been reported so far. The present paper describes the synthesis and characterization of complexes of transition metals Pt(II), Pd(II) & Fe (II) with p-phenyl isonitroso acetophenone on the basis of elemental analysis, IR Spectra, NMR Spectra, Magnetic properties and Antimicrobial activity.



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A Study of Personnel Selling & Sales Management A Connection Marketing Outlook

Prof. Dr. Parag R. Kawley

Vidyabharti College, Seloo

Abstract

Personal selling and sales management is change as an outcome of the enlarged concern on venerable, customer and seller communication and identifies various implications of these changes. Changes in predictable individual selling and sales management behavior are preferred to sustain the look of the partnering role for salespeople. For salespeople in the partnering role, the personal selling shifts from a focus on influencing buyer behavior to control the inconsistency intrinsic in buyer-seller relationships. The significance on structure associations rather than making short-term sales and the use of sales teams dictates changes in the way firms select, train, evaluate, and balance salespeople and members of sales teams; I want to propose some issues regarding the emerging partnering role for salespeople that justify the consideration of in personal selling and sales management.

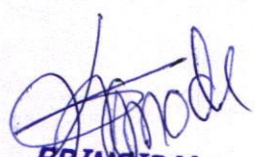
Keywords: Personal Selling, Salesperson, Sales Management, Customer, Marketing.

Introduction

The salesperson plays a key role in providing the customer with information about such goods to decrease the risks concerned in the purchase and utilize. Insurance, for example, is an intricate and practical product that regularly needs considerable amounts of personal selling.



It is essential to consider that for many companies the salesperson represents the customer's main link to the firm. The salesperson is the company. Therefore the company must take advantage of this unique link. Through the efforts of a successful salesperson, a company can build relationships with customers that continue long. Personal selling is an integral of the marketing system, fulfilling two vital duties: one for customers and one for companies. Lacking relevant information, customers are likely to make poor buying






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A review on Nanotoxicology: Aquatic environment and biological system

Ashish D. Tiple ^a, Vaishali J. Badwaik ^a, Sonali V. Padwad ^b, Ratiram G. Chaudhary ^c, N.B. Singh ^d  

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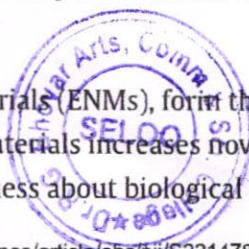
Abstract

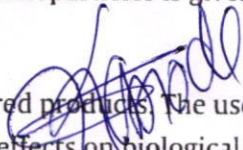
Nanotoxicology is a field of new and emerging research area in toxicology. This stream is related with the toxic effects of nanomaterials (NMs) on health and environment. They pose dangerous health effect, societal threat and environmental hazards due to their nanoscale diamensio. Physical, chemical properties of NPs and environmental factors collectively influence NPs behaviour and toxicity. The mechanism of NMs influencing the toxicity has been studied. Reactive oxygen species (ROS), oxidative stress, ecotoxicity, genotoxicity represents some mechanism. Here, this review will focus on topics including to chemical and physical properties of NMs and characterization for proper toxicological evaluation, exposure, environmental fate and transport, ecotoxic and genotoxic effects. This article discusses about possible sources and routes of NMs in the aquatic environment.

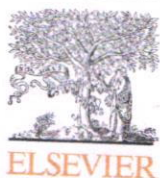
Introduction

Nanotoxicology deals with the special problems caused by nanoparticles. The toxicity of nanomaterials/nanoparticles on life and environment is determined by nanotoxicology. Nanotoxicological studies are intended to know and understand environmental and health issues [1]. Nanoparticles may cause toxicity in various ways. It may interact with blood, tissue fluid and also can enter the central nervous system and affect cardiac and cerebral functions. During the transfer through various site of organism, nanoparticles may bind with mediators which can activate inflammatory responses [2]. Nanotoxicology was proposed as a new branch of toxicology to address the gaps in knowledge and to specifically address the adverse health effects likely to be caused by nanomaterials. Complexity of toxicity of nanoparticles is given in Fig. 1 [3].

Engineered nanomaterials (ENMs), form the hub for growing industry and manufactured products. The use of engineered nanomaterials increases nowadays. There is also an uncertainty, how it effects on biological system. The unawareness about biological effects of NMs creates concern regarding their potential for



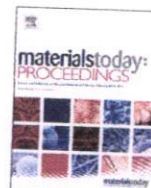

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A review on Nanotoxicology: Aquatic environment and biological system

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ABSTRACT

Nanotoxicology is a field of new and emerging research area in toxicology. This stream is related with the toxic effects of nanomaterials (NMs) on health and environment. They pose dangerous health effect, societal threat and environmental hazards due to their nanoscale diamensio. Physical, chemical properties of NPs and environmental factors collectively influence NPs behaviour and toxicity. The mechanism of NMs influencing the toxicity has been studied. Reactive oxygen species (ROS), oxidative stress, ecotoxicity, genotoxicity represents some mechanism. Here, this review will focus on topics including to chemical and physical properties of NMs and characterization for proper toxicological evaluation, exposure, environmental fate and transport, ecotoxic and genotoxic effects. This article discusses about possible sources and routes of NMs in the aquatic environment.

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Selection and peer-review under responsibility of the scientific committee of the International Conference on Advanced Functional Materials (Innovations in Chemical, Physical and Biological Sciences).

1. Introduction

Nanotoxicology deals with the special problems caused by nanoparticles. The toxicity of nanomaterials/nanoparticles on life and environment is determined by nanotoxicology. Nanotoxicology studies are intended to know and understand environmental and health issues [1]. Nanoparticles may cause toxicity in various ways. It may interact with blood, tissue fluid and also can enter the central nervous system and affect cardiac and cerebral functions. During the transfer through various site of organism, nanoparticles may bind with mediators which can activate inflammatory responses [2]. Nanotoxicology was proposed as a new branch of toxicology to address the gaps in knowledge and to specifically address the adverse health effects likely to be caused by nanomaterials. Complexity of toxicity of nanoparticles is given in Fig. 1 [3].

Engineered nanomaterials (ENMs), form the hub for growing industry and manufactured products. The use of engineered nanomaterials increases nowadays. There is also an uncertainty,

how it effects on biological system. The unawareness about biological effects of NMs creates concern regarding their potential for causing unexpected adverse health effects. During past decade research on environmental impacts of NMs has been flourished but studies on environmental fate, transport, and toxicity of a variety of nanomaterials are still lacking. In this review role of NMs in the aquatic environment and biological systems has been reviewed.

2. Physical and chemical properties of NPs influencing their toxicity

Physical and chemical properties of NMs make them suitable in several applications for humans such as medicine, energy production and also adversely affect the humans and the environment like penetrance in biological barriers causing cell damage. The physicochemical characteristics of nanomaterials, including their chemical composition, shape, size, stability, functionalization, charge, porosity and hydrophobicity/hydrophilicity, agglomeration or aggregation, mainly affect their interactions with biological molecules. In Fig. 2 the most important parameters of nanoparticles are summarized [4]. The impact of nanoparticle characteristics in their toxicity is represented in Fig. 3 [4].

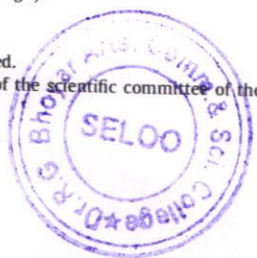
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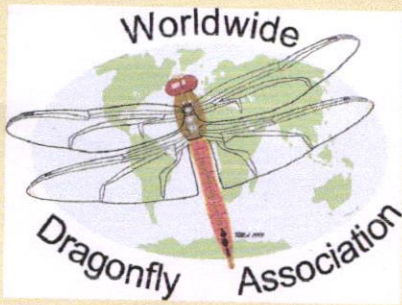
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ADDENDUM to "Phylogenetic implications of the pterothoracic sternites of Odonata nymphs"

Kenneth J. Tennessen
[ktennessen@centurytel.net]

In my paper in the May 2020 special Covid-19 issue of *AGRION*, I scored the nymphs of 30 families of Odonata for the presence or absence of a ventral transverse suture between the mesothorax and metathorax (Tennessen, 2020: 106, Table 1). Three "lestoid" families were included in the original study, but no specimens of Hemiphlebiidae and Synlestidae were available at that time. The evidence at hand raised the question of whether all Lestoidea lacked a ventral transverse suture. Since the publication of my article, Adolfo Cordero Rivera has kindly sent me data on *Hemiphlebia* and *Phylolestes*, along with photographs, revealing that these genera do not possess a transverse suture between the meso- and metathorax. In summary, it appears that all Lestoidea lack a ventral transverse suture, whereas all "non-lestoid" Zygoptera families have a suture. Therefore, the conclusions that I drew in my paper are substantiated.

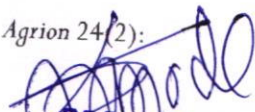
Acknowledgements

I thank Adolfo Cordero Rivera (University of Vigo, Spain) for examining specimens and taking photos of the thoracic venter of *Hemiphlebia* and *Phylolestes* nymphs and for allowing me to use the data in this note.

Reference

Tennessen, K.J., 2020. Phylogenetic implications of the pterothoracic sternites of Odonata nymphs. *Agrion* 24(2): 104-107.




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