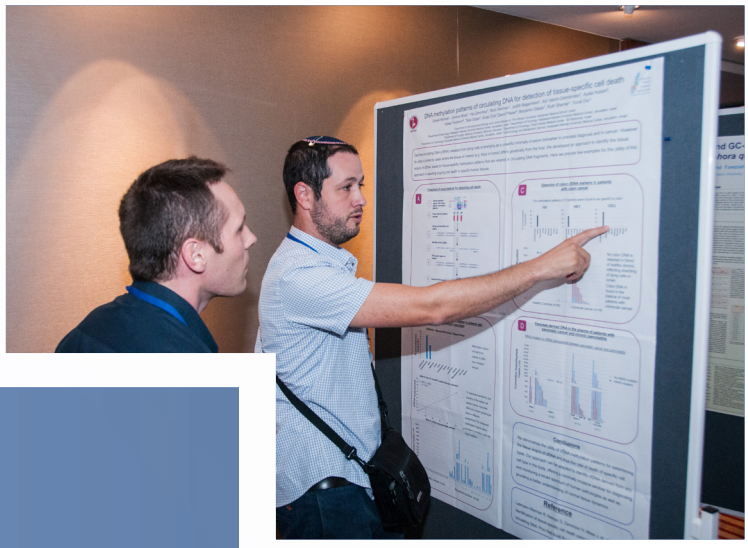
International Conference on

Polymerization Catalysis, Flexible Polymer and Nanotechnology

September 06-07, 2018 Dubai, UAE



Scientific Tracks & Abstracts (Day 1)

Ideisan I Abu-Abdoun, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Hyper-branched triphenylamine Schiff base preparation and complexation

Ideisan I Abu-Abdoun
University of Sharjah, UAE

A triphenylamine hyper-branched Schiff base was prepared in a good yield and molecular weight using Schiff reaction between mono- and tri-formyl derivatives of Triphenylamine (TPA) and selected aromatic and aliphatic diamine compounds to give amine-imine multi-anchored product. Triphenylamine as electron donor and hole transport group was devised and synthesized and complexation of the multifunctional products isolated with metals such as Cu^{2+}, Ni^{2+}, Pt^{2+}, Ni^{2+} was carried out. The structural properties of the isolated products can be verified by Fourier Transform IR (FT-IR) spectroscopy and other techniques. Chemical oxidation of the product of the condensation reactions gives a stable cation radical which can be used in polymerization of epoxide and vinyl monomers and as a powerful one electron oxidizing reagent in organic reactions, at room temperature.

Biography

Ideisan I. Abu-Abdoun is Professor of Chemistry at the Department of Chemistry, University of Sharjah, United Arab Emirates. He holds his Ph.D. degree from the University of Liverpool, Liverpool, United Kingdom in polymer Chemistry (1982). Prior to join the University of Sharjah, he worked at different universities including King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia; Aal-Albayat University, Jordan; Bowling green State University (BGSU), USA; and Liverpool University (UK).

abuabdoun@sharjah.ac.ae

Notes:

K V Madhuri et al., J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

A comparative study on the growth of V_2O_5 thin films at various substrate temperatures

K V Madhuri, M Bujji Babu and Y V Omprakash
VIGNAN'S Foundation for Science, Technology & Research, India

Pure vanadium pentoxide thin films were prepared by electron beam evaporation technique onto well cleaned corning 7059 glass substrates. The films were prepared at an oxygen partial pressure of 2X10-4 mbar and at substrate temperatures ranging from RT to 450°C. The deposited films were characterized to study the effect of substrate temperature on the structural and optical properties. As the films deposited at room temperature are amorphous in nature which was observed from XRD and Raman studies and confirmed by the AFM image, the studies are aimed at physical properties of the films deposited at substrate temperatures 250°C, 350°C and 450°C. The XRD data revealed the orthorhombic structure of the films with well-defined peaks and the crystallite sizes were calculated by Debye-Scherrer formula. The variation in crystallite size with respect to substrate temperature and the average grain size from AFM studies were also discussed. The Raman spectra of the films deposited at Ts from 250°C to 450°C are well resolved and exhibiting the polycrystalline nature of the films. The optical band gap values are calculated from the optical transmittance spectra.

Biography

K V Madhuri is working as an Associate Professor in the Department of Science and Humanities, VFSTR University, Guntur, India. She also has the responsibilities as an Associate Dean, Research and Development in VFSTR Deemed to be University. She has completed her PhD from Sri Venkateswara University, Tirupati, India in 2003. She had worked as a Post-Doctoral Fellow at Universite de Moncton, New Brunswick, Canada from 2003-2005. Her studies involve the preparation and characterization of transition metal oxide thin films and their applications in chromogenic devices and gas sensors. She has contributed many research papers in national/international journals of repute. She also delivered invited lectures in reputed institute and conferences in India and abroad.

kvmsvu@gmail.com

Notes:

Hari Bhau, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Extractive Spectrophotometric Determination of Osmium (VIII) using p-methylphenylthiourea as a Chromogenic reagent: Sequential Separation of Palladium, Osmium and Platinum

Hari Bhau
P. V. P. College, India

Simple, rapid and sensitive solvent extraction and spectrophotometric determination method has been developed for the determination of Os(VIII) using P-Methylphenyl Thiourea (PMPT) as an analytical reagent. PMPT has been synthesized and characterized by spectral analysis. PMPT extracts Os(VIII) quantitatively into chloroform from perchloric acid media. The chloroform extract shows an intense peak at 512 nm (λ max). Beer's law is obeyed over the Os(VIII) concentration range of 60 µg/mL. The molar absorptivity and Sandell's sensitivity for Os(VIII)-PMPT system is 6.826×10^3 L $mol^{-1}cm^{-1}$ and 0.028 µg cm^{-2} respectively. The composition of extracted species is found to be 1:1 (Os(VIII): PMPT) by slope ratio method, job's continuous variation and mole ratio method. Interference by various ions has been studied. The proposed method has been successfully applied for determination of Os(VIII) in synthetic samples. Sequential separation of Palladium(II), Osmium(VIII) and Platinum(IV) is carried out by using proposed method.

Biography

Haribhau R Aher has completed his PhD from Pune University. He is working as an Assistant Professor at Department of Chemistry, P V P College, Pravaranagar. He has 26 research papers in national and international journals to his credit.

haribhau.aher@gmail.com

Notes:

Said Al Azar, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Electronic structure and formation energy of $TiCxH_2$-x alloys: DFT study

Said Al Azar
Middle East Technical University in Amman, Jordan

In this work, the electronic structure and formation energy of $TiCxH_{2-x}$ alloys (x=0, 0.25, 0.5, 0.75, 1) are investigated by performing density functional theory calculations. The total energy calculations showed that hexagonal close-packed (h.c.p) structure is more preferable and stable than cubic (f.c.c) one for $x \geq 1/2$. The results showed that for the cubic (f.c.c) structure, hydrogen atoms are occupied partially both octahedral and tetrahedral interstices while carbon atoms occupied only the octahedral interstices. On the other hand, the hexagonal close-packed (h.c.p) structure showed that the octahedral interstices are fully occupied by carbon and the tetrahedral interstices are partially occupied by hydrogen.

Biography

My research focuses on subjects central to study and investigate computationally, from an ab initio standpoint, the electronic and magnetic properties of new functional nanomaterials such as catalyst, topological insulators, Half-metallic etc. One of the most important interests for me is to construct and modeling calculations by the clustering solution. If there are a clustering solution and HPC technology in your department, I can use these facilities and pursue my research projects. Furthermore, I was attended many workshops and tutorials in High-Performance Computing (HPC)and computational physics, which was very interesting and useful for me. My experience and knowledge in ab initio packages such as Wien2k and abinit, OS operating systems and C/C++ and FORTRAN programming qualified me to be a computational physics researcher.

q_saed74@yahoo.com

Notes:

Helanka J Perera et al., J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

International Conference on

Polymerization Catalysis, Flexible Polymer and Nanotechnology

Superhydrophobic/hydrophobic coatings with fluorinated and non-fluorinated diatomaceous earth particles

Helanka J Perera[1] and Frank D Blum[2]
[1]Abu Dhabi Women's College, UAE
[2]Oklahoma State University-Stillwater, USA

Superhydrophobic/hydrophobic coatings were made using Fluorinated (FS) and Non-Fluorinated (NFS) Silane treated Diatomaceous Earth (DE) with different polymeric resins/binders. These coatings have been characterized with contact angle measurements, scanning electron microscopy and thermogravimetric analysis. Contact angles greater than 150° were attainable if the particles were sufficiently coated with fluorinated and non-fluorinated coupling agents and also if there were enough particles in the coatings. The critical particle loadings depended on the resin/binder system used. The behavior of these surfaces mimics that from, for example, the lotus leaf as they had low surface energies and also appropriate nano-micro structures.

Biography

Helanka J Perera has completed her PhD from Oklahoma State University, USA and is currently an Chemistry Assistant Professor in Maths and Natural Science Department at Abu Dhabi Women's College, UAE. Her research interests are in material science, surface modification on micro and nanomaterials, superhydrophobicity, hydrophobicity, polymer and surface characterization.

hperera@hct.ac.ae

Notes:

M Suriyavathana, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Biogenic nanosynthesis of *Anisomeles malabarica* leaves (AgNps) and cytotoxic effect on $HepG_2$ cell lines

M Suriyavathana
Periyar University, India

Nanoscience and nanotechnology have been an interesting field of research and gained much importance from last two decades. Nanotechnology is fundamentally changing the way in which materials are synthesized and devices are fabricated. Incorporation of nanoscale building blocks into functional assemblies and further into multifunctional devices can be achieved through a bottom-up approach. Research on the synthesis of nanosized material is of great interest because of their unique properties like optoelectronic, magnetic and mechanical, which differs from bulk. Nanostructured materials are being viewed as the future material and for various diverse applications in areas such as biomedical science, optics, mechanics, magnetics catalysts, biosensors and energy science. Biological methods can be used to synthesize silver nanoparticles without the use of any harsh, toxic and expensive chemical substances. Green synthesis approaches of producing NPs are an alternative source of conventional method and possess excellent antimicrobial activity. Nonalcoholic fatty liver disease is a common clinic pathological condition characterized by significant lipid deposition in the hepatocytes of the liver parenchyma. The pathological picture bears a striking resemblance to that of alcohol-induced liver injury, but it occurs in individuals who deny a significant history of alcohol ingestion. The effect of complex mixtures on several cellular responses, in an *in vitro* liver model using human hepato carcinoma (HepG2) cells, was studied. The synthesis nanoparticles were characterized by UV-Visisble sepectroscopy, FTIR, SEM and EDX, TEM, XRD. AgNps of *A. malabarica* on HepG2 cell line showed dose dependent activity performed by Laura Talarico, 2004 method. The AgNP's exhibited good cytotoxic effect. Activation of the caspase-3 pathway is a hallmark of apoptosis. The nano based phyto medicine will certainly provide and serve the line of safety and also will be used as eco-friendly than allopathic chemically synthesized drugs in future.

Biography

M Suriyavathana has completed her PhD in Bharathiar University, Coimbatore and upholding the position of Assistant Professor in Department of Biochemistry, Periyar University, Salem, Tamil Nadu, India. Her area of specialization is on medicinal plants and plant therapeutics, green nanotechnology and clinical biochemistry. Currently she is a Member in Centre for Nanoscience and Nanotechnology of Periyar University, Salem. She has nearly 70 research publications in referred and non-referred journals. She has authored two books *Nutraceuticals the Future Safe Medicine* and *Biochemical Characterization in Cassava*. She has completed five minor and one major research projects national and state levels. She has been honored and recipient of Dr. APJ Abdul Kalam Award for Teaching/Scientific Excellence-2015, AUFAU International award for Outstanding Researcher in Plant Therapeutics and Clinical Biochemistry in 2016.

suriyabio14@gmail.com

Notes:

Dilip R Thube, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Novel supported TiO_2 nanocomposites: An efficient photocatalyst for water cleaning technology

Dilip R Thube
Savitribai Phule Pune University, India

Supported TiO_2 nanoparticles were synthesized by sol-gel method using blue-green phosphor and characterized using X-ray diffraction (XRD), diffused reflectance UV-Visible spectroscopy, Fourier-transform infrared and electron microscopy techniques. The XRD study reveals that the TiO_2 crystal structure does not transform from anatase to rutile phase till 600 ^oC. Covalent interaction between the phosphor and TiO_2 is evident from the diffuse reflectance spectra showing red shift in wavelength. The band-gap has been tuned to absorb light in the visible range. TEM micrographs of the as-prepared materials revealed presence of well dispersed polycrystalline TiO_2 nanoparticles on the surface of the phosphor substrate. The difference in size of TiO_2 particles that are bonded to the phosphor is attributed to the magnitude of Lewis acid-base interactions between TiO_2 and phosphor support. Photocatalytic activity of as-prepared nanocomposite was investigated by photodegradation of model organic pollutant methylene blue under UV and visible light. The nanocomposite catalyst showed highest photocatalytic activity.

Biography

Dilip R Thube has completed his PhD from Pune University, India. He has been honored with Brain Pool International Fellowship from Korea Research Institute of Chemical Technology, South Korea. He is the Professor of Chemistry at New Arts, Commerce and Science College, Parner, Savitribai Phule Pune University, India. He has over 40 publications and has been serving as an Editorial Board Member of reputed journals.

drthube@rediffmail.com

Notes:

Shashikanth Kuchekar, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Separation of Tin (II) from environmental samples using O-methylphenyl thiourea as an novel reagent

Shashikanth Kuchekar
Women Science College of Technology, India

A simple and rapid method has been developed for solvent extraction and separation of tin (II) using O-Methylphenyl Thiourea (OMPT) as a sensitive reagent. The basis of the proposed method is tin(II)-OMPT complex formation in aqueous potassium iodate media (0.1 mol L^{-1}) and it is extracted into chloroform. The absorbance of complex was measured at 504 nm. Beer's law was obeyed up to 9 µg mL^{-1} of tin(II). The molar absorptivity and Sandell's sensitivity of the complex were 1.2457×10^4 L mol^{-1} cm^{-1} and 0.0955 µg cm^2 respectively. The stoichiometry of tin(II)-OMPT complex was 1:2 established from slope ratio method, mole ratio method and job's continuous variation method. The stability of tin(II)-OMPT complex was >12 hours. The proposed method is free from interferences from large number of foreign ions. The proposed method was successfully applied for separation and determination of tin(II) from real samples (environmental and food), binary and ternary synthetic mixtures. Precision of method was checked by finding relative standard deviation for 10 determinations was 0.23%. Sequential separation method has been developed for separation of antimony(III), lead(II) and tin(II).

Biography

Shashikant R Kuchekar has completed his PhD from Shivaji University Kolhapur and has worked as a Visiting Professor at Department of Inorganic Nanomaterials, Hanyang University, South Korea and a Visiting Researcher at University of Santiago De Compostela, Spain. He is the Principal of Women's College of Home Science and BCA. He has 92 research papers in national and international journals to his credit.

shashi17@gmail.com

Notes:

Ahmed Tabish, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Polymer nanotechnology

Ahmed Tabish
Khalifa University, UAE

The issue of corrosion is a well-known problem and it causes the weakening of metal and its properties and makes it unfit for use. Corrosion causes enormous economic losses consistently over years in equipment maintenance, repair, and its substitution. In Gulf Cooperation Council (G.C.C) countries, money spent into corrosion control and repair are extremely dependent on production of oil, refining and petrochemicals sector shall be noteworthy as it comprises more than 33% of gross domestic products. Until now, various coatings have been developed to tackle this problem like sacrificial coatings, barrier coatings, noble metal coatings and electrically resistive coatings. In this study, self-healing smart anti-corrosion coatings were synthesized as it is a much lesser investigated area of research. Functionalized particles from mesoporous carbon along with mesoporous silica etc. were used as Nano containers for encapsulation of corrosion inhibitor for self-healing purpose using layer-by layer (lbl) self-assembly method and their effect on performance of coatings were studied after adding in commercially available polymer matrix against the corrosion of mild carbon steel in seawater. A series of tests were conducted on the resultant coatings to investigate their corrosion resistance, self-healing performance etc. This study will evaluate the protection offered by coatings of commercially available porous materials against the corrosion of mild steel in seawater, along with addition of different encapsulated nano containers in the polymer matrix. Benzotriazole (BTA) was used as a corrosion inhibitor in this study for synthesizing Nano containers. Self-healing smart anti-corrosion coatings, is a much lesser explored area of research with the major challenge of low adhesion properties and release of Nano containers to heal the corroded metal substrate. This calls for preparation of substrate surface and treatment of coatings to establish good interfacial interaction of the nano containers with the porous material and their successful release in the medium upon a pH change to avoid delamination/corrosion of coatings in water. The potential of the functionalized carbon materials to further enhance anticorrosion performance of the self-healing coatings was also evaluated. The coatings were prepared by brush coatings as well as dip-coating methods in determined optimal conditions on clean polished mild carbon steel coupons. The coating degradation behavior and corrosion resistance was investigated by the immersion tests (performed in 3.5 wt. % sodium chloride solution) and Potentiostatic Electrochemical Impedance Spectroscopy (PEIS). Brunauer–Emmett–Teller (BET) testing was done only initially in order to determine the degree of impregnation in the pores of the carbon and silica materials. Corrosion monitoring was performed using Linear Polarization (LP) technique. Other nanocapsules characteristics were studied using techniques such as Fourier Transform Infrared Spectroscopy (FTIR), X Ray Diffraction (XRD) was used to characterize the composition of the multilayers of the Nano capsules, Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM) were used to analyze the surface morphology of coatings as well as nanocapsules. The visual appearance of coating and corrosion products was studied using Optical Microscopy (OM). Coating thickness measurements were done using a standard PosiTector gauge. Zeta Potential was also analyzed continuously during the synthesis of nanocapsules in order to optimize the layer-by-layer assembly of a self-healing coating. Ultraviolet–visible spectroscopy (UV-Vis) was also studied to analyze the release behavior of the synthesized Corrosion Inhibitor encapsulated Nano containers in different pH of water. Self-healing testing of the synthesized coatings based on ASTM D7027-13 standards was also carried out to analyze the coating performance when exposed to corroding conditions. The electrochemical impedance spectroscopy (EIS) results illustrated the improved corrosion resistance of the coating based on carbon materials. The proposed coating also had a rapid self-healing ability in the presence of water. The mesoporous carbon based coatings produced, were highly stable and protective in nature. The self-healing coatings possessed high impedance good barrier characteristics. The mesoporous carbon and functionalized mesoporous carbon coatings were compared with coatings of mesoporous silica and commercially available vinyl acrylate. The SEM analysis also revealed successful release of BTA onto the corroded surface thus verifying the self-healing effect. UV-Vis predicted that the carbon based capsules had more impregnation of the corrosion inhibitor than the silica based nanocontainers. It was observed that carbon based coatings and its 5 wt. % composition in the polymer matrix had better anticorrosive performance and adhesion than the silica coatings and provided much greater substrate protection as explained in the work in detail.

Notes:

tabishzhcet@gmail.com

Pourya Zarshenas et al., J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Novel magnetically chitosan based N-heterocyclic carbene as recyclable nano-catalyst and highly efficient for cross-coupling reaction

Pourya Zarshenas, Hatef Shahmohammadi, Bahareh Heidari and Roya Sedghi
Shahid Beheshti University, Iran

In this paper, novel magnetically chitosan@N-Heterocyclic Carbene-Palladium (NHC-Pd) coated Multi-Walled Carbon Nanotube (MWCNTs) was synthesized in three steps: (1) The reaction of Chitosan, glyoxal and formaldehyde for synthesis of chitosan@imidazol, (2) synthesis of magnetic functionalized-MWCNTs and (3) the esterification reaction via the reaction of hydroxyl and carboxylic acid groups of chitosan@imidazol and magnetic functionalized-MWCNTs respectively and followed with the attachment of palladium chloride to compose of novel NHC ligand for the first time. Catalytic studies of magnetic chitosan@NHC-Pd coated MWCNTs for the Suzuki cross-coupling reaction of various aryl halides with aryl boronic acids have been evaluated in the ethanol-water solution. In general, our new catalyst showed superior reactivity for this model reaction. Moreover, the heterogeneous catalyst can be easily recovered by external magnet field and reused for subsequent use without any significant loss in catalytic activity. The Suzuki-Miyaura cross-coupling reaction is important, synthetic transformations that are widely employed for the preparation of bi-aryl compounds in a great variety of industrial applications including the production of natural products, agrochemicals and pharmaceuticals. Challenges facing this reaction are the employ of catalysts that are efficient with higher Turnover Frequencies (TOF) and Turnover Numbers (TON), easily recoverable and can operate in environmentally benign solvents. Therefore, much recent effort has been searched and made approaches to develop efficiently heterogeneous Pd-catalyst systems.

Biography

Pourya Zarshenas has completed his BSc in 2013 from Shahid Beheshti University, Iran.

dr.pouryazarshenas@yahoo.com

Notes:

International Conference on

Polymerization Catalysis, Flexible Polymer and Nanotechnology

September 06-07, 2018 Dubai, UAE

Symposium (Day 2)

M Suriyavathana, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

M Suriyavathana

Periyar University, India

New horizon of nanotechnology in phytomedicine

Nanomaterials play key roles in science and technology during 21st century. The science and technology of nanomaterials created great excitement and expectations in the last few years. The next decade is likely to witness major strides in the preparation, characterization and exploitation of nanoparticles, nanomaterials and healthcare products, etc. For most earths 7 billion people, plant based on many well established system of medicine in either crude extract form represent the foundation of primary health care for the foreseeable future. Under these circumstances, traditional medicines must be safe, effective and technology continued to evolve many opportunities exist to improve continuously traditional medicine produces for both the internal and external therapeutic potential. To explore and preserve our traditional heritage of Indian system of medicine it is right time to rationalize the use of phytomedicine and the multidisciplinary issues on disease management research including, development of traditional medicine, herbal formulation, dietary supplements, phytochemical and pharmaceuticals from nature resources exploring their quality efficacy and safety. Plants have always played a major role in the treatment of human and animal diseases. A medicinal plant is therapeutic resource much used by the traditional population of the world specifically for the health care. Worldwide interest in the use of medicinal and aromatic plants is increasing. Beneficial effects of plants based medicines and other plant based products are being rediscovered. A careful study on the implications of the phytomedicines and well defined interventions will prosper the domain of phytomedicine.

Biography

M Suriyavathana has completed her PhD in Bharathiar University, Coimbatore and upholding the position of Assistant Professor in Department of Biochemistry, Periyar University, Salem, Tamil Nadu, India. Her area of specialization is on medicinal plants and plant therapeutics, green nanotechnology and clinical biochemistry. Currently she is a Member in Centre for Nanoscience and Nanotechnology of Periyar University, Salem. She has nearly 70 research publications in referred and non-referred journals. She has authored two books Nutraceuticals the Future Safe Medicine and Biochemical Characterization in Cassava. She has completed five minor and one major research projects national and state levels. She has been honored and recipient of Dr. APJ Abdul Kalam Award for Teaching/Scientific Excellence-2015, AUFAU International award for Outstanding Researcher in Plant Therapeutics and Clinical Biochemistry in 2016.

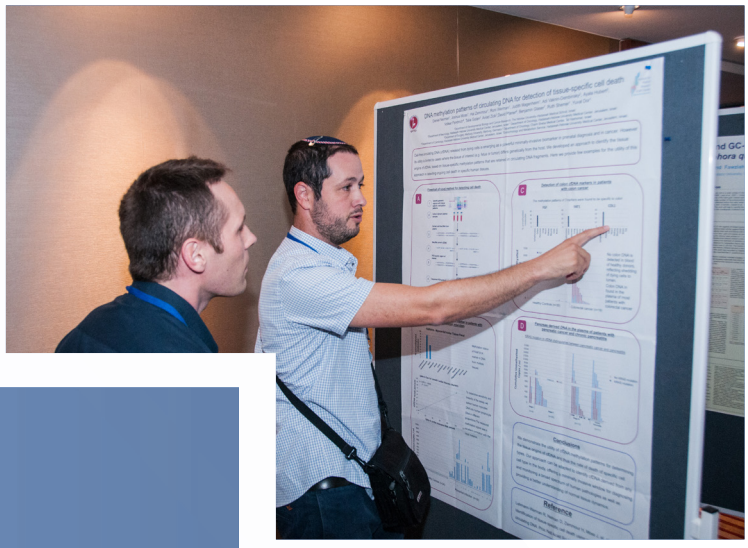
suriyabio14@gmail.com

Notes:

International Conference on

Polymerization Catalysis, Flexible Polymer and Nanotechnology

September 06-07, 2018 Dubai, UAE



Scientific Tracks & Abstracts (Day 2)

Mohammad Hosain Beheshty, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Advanced epoxy resins for making structural composites

Mohammad Hosain Beheshty
Iran Polymer and Petrochemical Institute, Iran

Epoxy resins are widely used in different industries as adhesives, surface coatings and matrix of composites. This is due to their unique properties including excellent mechanical and electrical properties, thermal and chemical stability. The pure or virgin epoxy resins have high viscosity and the inherent toughness of polymer network is low. Some additives like diluents, fillers (micro or nano) extenders, adhesion promoters and toughening agents usually are being used in epoxy formulations in order to make a suitable or advanced epoxy matrix. Much research has been carried out to enhance the toughness of the cured epoxy resins. The general strategies used are introduction of flexible chain into the network structure (e.g. ether linkage), compatible blending with flexible or ductile polymer, reduction in crosslink density of network and introduction of a suitable matter like rubber, thermoplastic or rigid particles as a second phase. For a decade we have done a comprehensive work in the area of modifications of epoxy resins in order to develop an advanced epoxy matrix system suitable for making glass or carbon/epoxy prepregs. These includes selection of suitable epoxy resins, curing systems, modification of an epoxy system by using reactive diluents, toughening of a system by using carboxyl-terminated Copolymer of Butadiene and Acrylonitrile (CTBN), poly (propylene oxide) based amine (Jeffamine D-400) or long-chain hardener and Hydroxyl Terminated Poly butadiene (HTPB), micro capsulation of curing agent and developing new latent accelerator.

Biography

Mohammad Hosain Beheshty has received his PhD from Bath University, UK. He is the Head of Composite Department of Iran Polymer and Petrochemical Institute and Chairman of Iran Composite Scientific Association. He has published more than 85 papers in reputed journals and has been serving as an Editorial Board of *Iran Polymer Journal and Iranian Journal of Polymer Science and Technology.*

m.beheshty@ippi.ac.ir

Notes:

conferenceseries.com

Khalid Essa Al Ani, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

International Conference on
POLYMERIZATION CATALYSIS, FLEXIBLE POLYMER AND NANOTECHNOLOGY
September 06-07, 2018 Dubai, UAE

Irradiation and plasticization effect on stability of poly (4-ethoxystyrene) in solid film and in solution

Khalid Essa Al Ani
[1]Jadara University, Jordan
[2]University of Baghdad, Iraq
[3]University of Technology, Iraq

Irradiation of poly (4-ethoxystyrene) in solid films and at 265 nm at room temperature showed a gradual photo-degradation of polymeric chains. Degradation was accelerated by the presence of air and rise in temperature. The degradation process was followed by UV-VIS, fluorescence and FT-IR Spectroscopic techniques. The intensity of absorption spectra was increased by the increase in irradiation time in both solid films and in solution; on the other hand the intensity of fluorescence was decrease upon the increase in irradiation time and increase in the amount of blended phthalate and terephthalate plasticizers. Some kinetics work was applied to the results on fluorescence intensity of the excimeric emission to evaluate the quenching efficiencies and photo quenching rate constant by applying Al Ani Hawi equation. The analysis of the FT-IR spectra of the irradiated and non-irradiated samples, showed a noticeable formation of new bands and their intensity was found to increase with the increase in irradiation time and also with the increase in the amount of added plasticizer. In addition, the observed increase in the intensities of the carbonyl and hydroxyl absorption regions of the FT-IR spectra, providing evidence for the photo-degradation as well as photo-oxidation of polymeric chains.

Biography

Khalid E Al Ani has completed his PhD from Southampton University, England and Postdoctoral studies from Texas University, USA. He was a Visiting Professor at Liverpool University at the Inorganic and Industrial Department, Liverpool, UK. He was a Professor at Baghdad University, Department of Physical Chemistry, Iraq. He was also a Professor of Physical Chemistry at Oran University of Science and Technology-Algeria, Hashemite University, Jordan. He was the Dean of Faculty of Pharmacy and currently the Head of the Pharmaceutical Sciences Department at Jadara University, Irbed, Jordan. He has published more than 48 original articles in international journals and attended many international conferences.

Khalidalani44@yahoo.com

Notes:

K. V. Madhuri, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Effect of oxygen partial pressure on electrochromic properties of WO_3 thin films

K. V. Madhuri
VIGNAN'S Foundation for Science, Technology & Research, India

In modern years, there has been an enormous interest in electrochromic technology, which triggered the designing and fabrication of efficient electrochromic devices (ECD) which work on the phenomena of electrochromism, in which a reversible optical modulation in the materials can be achieved by intercalation/deintercalation of small cations and electrons by the application small electric field. Tungsten trioxide (WO_3) is one among the various EC transition metal oxides recognized as best EC material in thin film form. It exhibits large optical modulation, good durability, stability, low power consumption for the prepared ECDs. WO_3(Transparent)+xH++xe-+$HxWO_3$ (Blue). In the present work, WO_3 thin films were prepared by electron beam evaporation technique at various oxygen partial pressures (PO_2) ranging from 2×10^{-3} to 2×10^{-5} mbar and at the substrate temperature of 250°C. The films were deposited onto well cleaned glass, ITO coated glass and silicon substrates. The influence of oxygen partial pressure on the growth, morphology, optical and electrochromic properties has been investigated. The XRD studies revealed that the phase transformation taken place from orthorhombic to monoclinic with respect to PO_2 from 2×10^{-3} to 2×10^{-5} mbar. The maximum optical bandgap of 3.28 eV was obtained for the films deposited at 2×10^{-5} mbar and decreased to 2.66 eV for the films deposited at 2×10^{-3} mbar. The coloration efficiency of WO3 films at the wavelength of 550 nm were found to be 50.84, 29.56 and 24.95 cm^2/C for the films deposited in the PO_2 of 2×10^{-3}, 2×10^{-4} and 2×10^{-5} mbar respectively.

Biography

K V Madhuri is working as an Associate Professor in the Department of Science and Humanities, VFSTR University, Guntur, India. She is also an Associate Dean, Research & Development in VFSTR Deemed to be University. She has received her PhD at Sri Venkateswara University, Tirupati, India in 2003. She had worked as a Post-doctoral Fellow at Universite de Moncton, New Brunswick, Canada from 2003-2005. Her studies involve the preparation and characterization of transition metal oxide thin films and their applications in chromogenic devices and gas sensors. She has contributed many research papers in national/international journals of repute. She also delivered invited lectures in reputed institute and conferences in India and abroad.

kvmsvu@gmail.com

Notes:

Montasir Qasymeh, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Graphene applications for nano-photonics

Montasir Qasymeh
Abu Dhabi University, UAE

Graphene is an atom-thick material that shows distinct electrical and mechanical properties, thanks to its hexagonal lattice of carbon atoms. For instance, graphene-based platforms offer a basis for compact and tunable photonic devices. This is because graphene waveguides offer nanoscale optical confinement, tunable graphene conductivity in the optical range, desirable properties of being able to stand alone and good compatibility with a wide diversity of optical and electronic materials. In this presentation, we present our recentwork on exploiting graphene layers to achieve , and giant amplification, of photonic signals in theterahertz frequency range, owing to the distinct grapheme properties.

Biography

M Qasymeh received a Ph.D. degree in electrical engineering from DalhousieUniversity, Canada, in2010. He was the recipient of a Mitacs Elevate Postdoctoral Fellowship at the Microwave Photonics Research Laboratory in the School of Electrical Engineering and Computer Science at the University ofOttawa, Canada. In 2011, he joined the Electrical and Computer Engineering Department at Abu Dhabi University, the United Arab Emirates, where he is currently an Associate Professor of Electrical Engineering. His current research interests include plasmonic devices and structures, and terahertz photonics. He is also active in research on nonlinear optics, electro-optic devices, and recently quantum photonics.

montasirq@yahoo.com

Notes:

Muteeb Ahmed Siddiqui, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Catalyst for betterment of humans

Muteeb Ahmed Siddiqui
Hamdard University, Pakistan

Future plan to make PET heavy metal free for human friendly packaging material, toxic heavy metal has to be replaced with light metal catalyst is the ultimate objective. Adverse effects of heavy metals including, life threatening diseases by damaging of brain, kidney, lungs in fact damage to all major organs. At present heavy metal migration limits are 40 ppb. For one of its kind project, series of trial were designed, out of which first two light metal catalyst trials on one of the world largest PET production lines did not results in the desired heavy metal free process with high process stability and high production quality as demonstrated on pilot lines. Therefore, a second pilot plant trial was executed to define root causes. In the latest pilot plant trial results from previous pilot plant trials could be repeated and exceeded by switching the new catalyst injection point from post-ester (second chamber of reactor) into esterification (first chamber of reactor), respective in the paste tank (giving it better mixing and more residence time). It has to be mentioned that in early commercial line trials it was thought that the new catalyst (light metal) could be partly deactivated in the esterification reactor due to too high end groups (COOH) and water content and that it would be most safe to feed the catalyst into the post ester reactor. Furthermore the esterification reaction is auto-catalyzed by H+ from the COOH and can run without any catalyst. After the commercial trials, the suspicion arose that the catalyst suffers a poor mixing when fed in the post-ester and that it should be tested to feed the catalyst into the paste or esterification chamber to ensure complete mixing. During pilot plant trial, it was a great surprise when feeding the new catalyst (light metal) in the esterification reactor that even with only 7.5 ppm it was possible to reach a stable viscosity after the melt phase polymerization of 0.80 dl/g at 100% name plate capacity. The slight deterioration in optical quality was later easy to adjust to standard color with addition of a small amount of toner. Another finding in that trial was that the esterification conversion should be above 90% otherwise a loss of viscosity after melt phase polymerization is possible. Along with minimizing human health concerns, stable process, energy efficient and better optical quality in PET are of prime interest in the establishment of light metal catalyst.

Biography

Muteeb Ahmed Siddiqui has completed his Engineering from Hamdard University, Pakistan. He is the Process Engineer of Octal, world largest PET manufacturer clear regin packing facility in Oman. He has vast experience of working in different polymer plants of resin and downstream products.

mas.gtti@gmail.com

Notes:

Ahmed Qasim Abushomi, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Engagement strategy to transform nanotechnology based products from theories to the factory floor in the Middle East

Ahmed Qasim Abushomi
University of Oxford, UK

This abstract is to present a case commonly seen across industries, whereas there are several innovative ideas represented that are never reached successfully to the market. There are key factors contributing to this case, a relevant analysis is conducted and then strategic recommendations are given based on the results observed. The aim of presentation is to enable investors, governments and decision makers in major companies to visualize the full potential of nanotechnology and understand the missing key in industries that inhibit such transformation. The challenges start by recruiting the right talents to work towards nanotechnology innovations, this begin from education at higher institutes, schools and organizations and touch on various factors beyond that. In the Middle East, there are multiple nanotechnology patents, few companies have established commercialization of nanotechnology products, the toxicity and regulations of nanomaterials is still uncertainty and R&D spending low. However, some examples are seen but are not yet to be successfully commercialized. Therefore, developing commercialization plan of products, monitoring of regulations and international standards, fostering R&D at academic and industrial level and developing the public engagement strategy are required. These steps are essential which will allow industries to engage in the development of nanotechnology product's life cycle and provide efficient solutions using this technology that will be presented to the market. In conclusion, there are real reasons for successful products that failed to reach the market; these will be encapsulate by giving recommendations which is adapted to demonstrate success in launching nanotechnology integrated products.

Biography

Ahmed Qasim Abushomi is pursuing his studies in Nanotechnology from the University of Oxford. He has been graduated from the Department of Electrical and Electronics Engineering at the University of Nottingham holding multiple professional certificates in innovation and leadership from the Massachusetts Institute of Technology and was awarded a professional certificate in Energy Innovation and Emerging Technologies from Stanford University.

Abushomiaq@gmail.com

Notes:

M Kavitha Rani et al., J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Green synthesis and structural elucidation of *Pisonia alba* leaves by AgNps

M Kavitha Rani and M Suriyavathana
Periyar University, India

Biological methods of nanoparticle synthesis using microorganisms, enzymes/proteins and plants extracts has been suggested as possible eco friendly methods of synthesis alternatives to physical and chemical methods. Recently, nanomedicine has become a leading research field. Use of plant for synthesis of nanoparticles could be advantageous over other environmentally benign biological process as this eliminates the elaborate process of maintaining cell cultures. *Pisonia alba* leaves belongs to family Nyctaginaceae These leaves are edible. It plays an immense role in various maladies conditions and it capable properties like antiulcer , antimicrobial, antidiabetic, anticarcinoma, anti-inflammatory, hyperglyemica, antiarthiritis, jaundice, swelling, antibacterial activity, thyroid hormone study. Fresh leaves of *Pisonia alba* were collected from kolli hills, Namakkal district, Tamil Nadu, India. Silver nanoparticles has attracted enormous interest because of its great potential for wide applications in food, cosmetic, clothing and pharmaceutical industries. Synthesis of Ag,Cu,Mg, Zn nanoparticles in *Pisonia alba* leaves aqueous extracts was done. nanoparticles of *Pisonia alba* leaves were characterized by UV-Visible, FTIR, TEM, SEM, EDAX, XRD and Zeta potential respectively. Phytochemical screening demonstrated that the many secondary metabolites compounds were present in AgNps and CuNps *Pisonia alba* extract. Uv-visible spectroscopy was used to monitor the synthesis of nanoparticles, the peak of AgNps of surface Plasmon resonance at 450nm, followed to CuNps 400nm, ZnPs 300nm and MgNps 480nm. The increase in the colour intensity also depends upon size of AgNps nano synthesized. FTIR measurements were carried out to detect the possible reactions for the reduction of Ag ions and Ag stabilization of Ag atoms. FTIR spectroscopy clearly indicates that biomolecules present in *Pisonia alba* are responsible for the synthesis of nanoparticles and their stabilization.12 functional groups are detected the Frequency range 3277.06cm^{-1} corresponds to N–H bond SEM equipped with an EDX detector. SEM results shows typical cuboid structure. The elemental composition of the nanoparticles was determined by Energy Dispersive X-ray (EDX). The EDX analysis reveals the strong signal at approximately 1.5Kev of the silver region due to surface Plasmon resonance. TEM micrograph which showed the nanoparticles synthesized are spherical and their size ranges from 10 to 20 nm. The XRD crystalline nature of AgNps observed at 23.6˚, 29.5˚, 40.9˚, 2θ value. Zeta potential provide–10mV.

Biography

M.Kavitha Rani pursuing Ph.D in department of biochemistry, periyar university , salem, Tamil Nadu, India under the guidance of Dr.M.Suriyavathana, Assistant professor. I am Senior research fellow in Rajiv Gandhi National Fellowship (RGNF-SRF) from 2015, currently working on anti Urolithiasis effect in *Pisonia alba* leaves extract. To my credit i have published two research papers.

kavibio91@gmail.com

Notes:

International Conference on

Polymerization Catalysis, Flexible Polymer and Nanotechnology

September 06-07, 2018 Dubai, UAE

Video Presentations

Asma Khurshid, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Radiation assisted polymerization methodology: Its significance and applications

Asma Khurshid
Pakistan Institute of Engineering, Pakistan

Radiation induced polymerization methodology has got much importance nowadays due to the advantages associated with it as it proceeds without addition of any additive or catalyst for initiating a polymerization reaction. Among the various processes involved, the radiation induced graft polymerization is of prime interest which makes use of ionizing radiation (γ-radiation) thus giving rise to polymerize products including variety of commercial products such as radiation cross-linked Teflon and polyswitches etc. Based on the significance of radiation technology in polymer industry, our lab is working on the utilization of Co-60 i.e., the γ-radiation source for grafting different polymeric base materials such as graphene, sepiolite and silica etc., that are later on functionalized to produce modified nanostructures for various environmental applications.

Biography

Asma Khurshid has completed her PhD Chemistry in 2017 from Quaid-i-Azam University, Pakistan. Part of her PhD research has been carried out at Oxford University; United Kingdom. Up till now she has 7 publications on her part in Journals of International repute. She has been selected as Young Scientist among global competition for participation in 67th Chemistry Lindau Nobel Laureates Meeting in Chemistry, Germany 2017. Presently, she is serving as Assistant Professor in Department of Chemistry (working in Advanced Polymer Chemistry Laboratory), Pakistan Institute of Engineering & Applied Sciences, Pakistan.

asmakhurshid2000@hotmail.com

Notes:

Madiha Irfan, J Nanomater Mol Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C8-088

Synthesis and studies of carbazole-pyridine copolymers for optoelectronic applications

Madiha Irfan
Quaid-i-Azam University, Pakistan

Synthesis of Carbazole-pyridine copolymers have been carried out by an economical method and their photo physical, thermal and electrochemical properties have been investigated. The polymers are solution process able having blue emission in the region of 400-450 nm. The synthesized polymers possess thermal stability upto ~400°C with glass transition temperature above 150°C. The high thermal stability, blue fluorescence along with high quantum efficiency employs these materials as potential candidate for optoelectronic applications.

Biography

Madiha Irfan has completed her PhD from Quaid-i-Azam University Islamabad. Her research area involves optoelectronic materials and she has published more than 15 papers in reputed international journals (ISI journals). She has been serving as a member of NCRC.

asmakhurshid2000@hotmail.com

Notes: