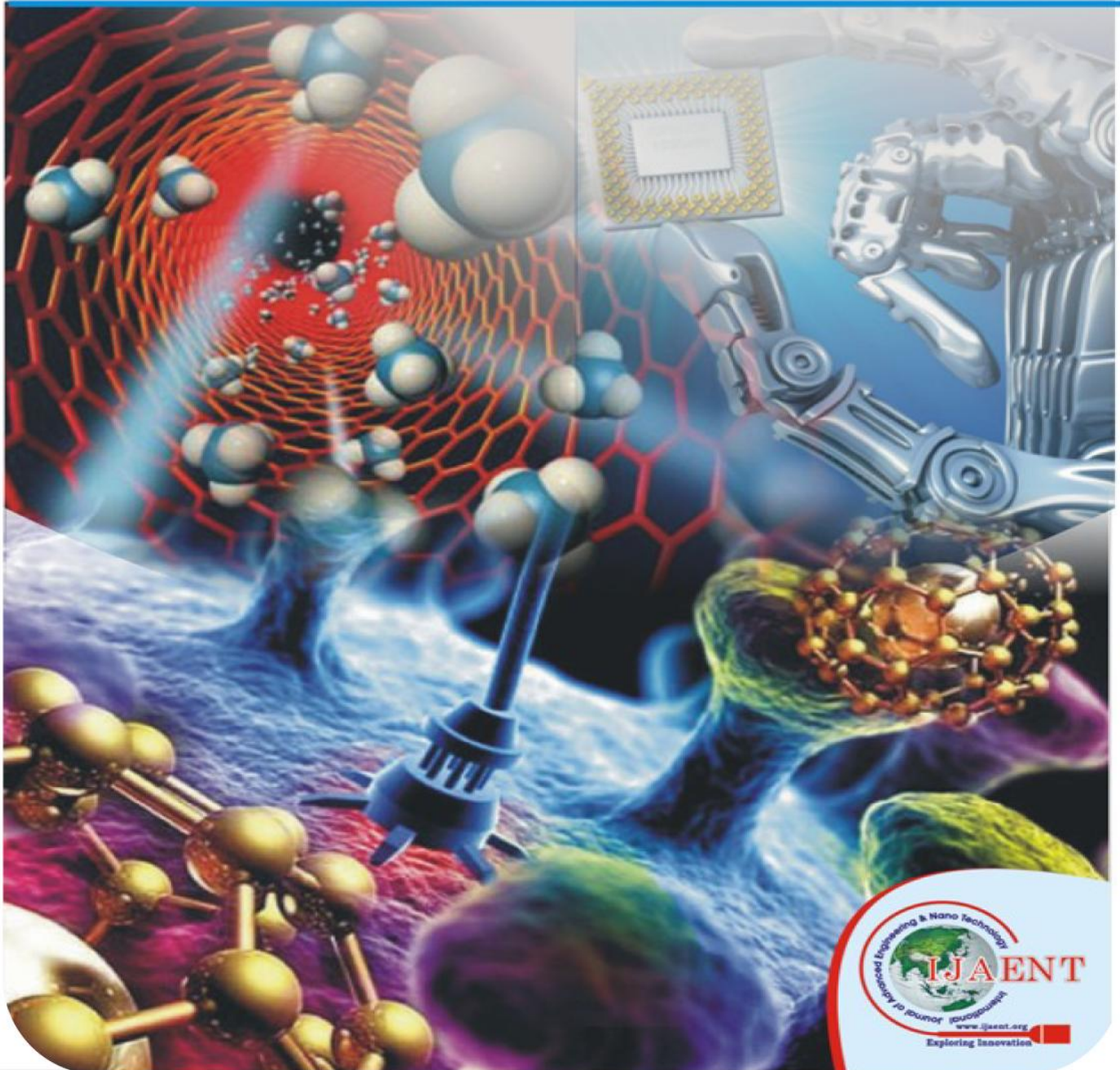


Volume 3 Issue 3, April 2016

**International Journal of Advanced Engineering
and Nano Technology**



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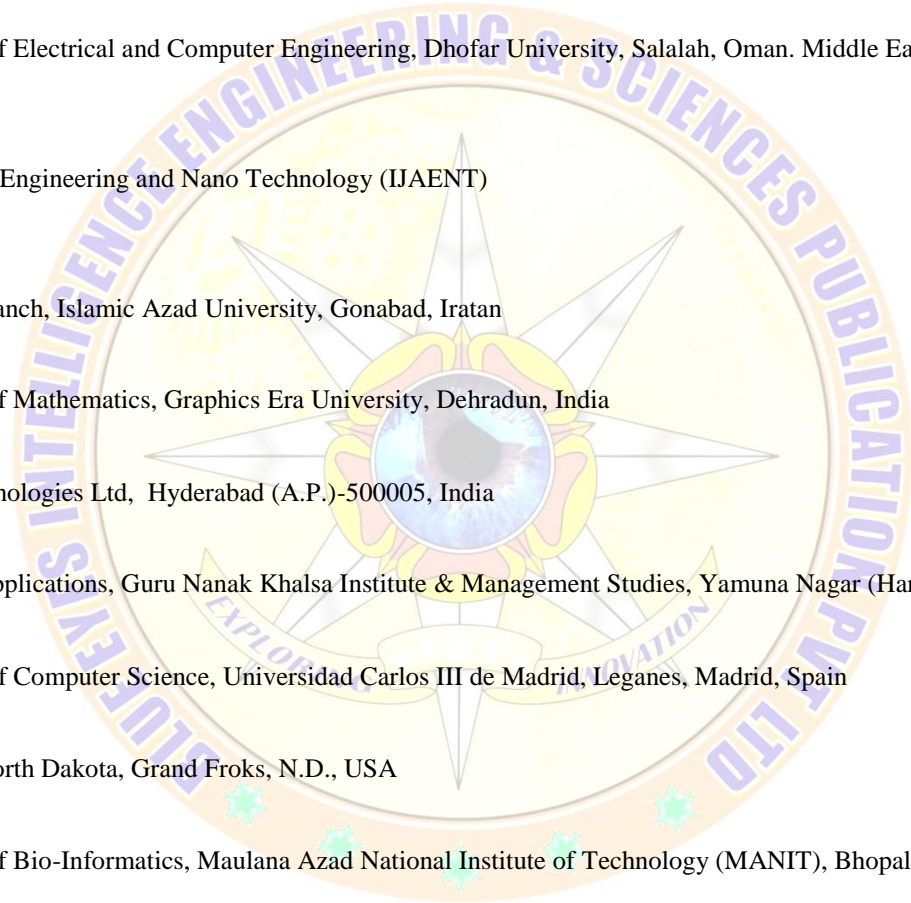
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1.	Authors:	P. Anitha, P. Sakthivel		
	Paper Title:	Microwave Assisted Synthesis and Characterization of Silver Nanoparticles Using Citrullus Lanatus Leaf Extract and Its Anti-Inflammatory Activity Against Human Blood Cells		
	<p>Abstract: The use of engineered nanomaterials has increased as a result of their positive impact on many sectors of the economy, including agriculture. In the current study, the plant extract of Citrullus Lanatus is used for the synthesis of silver nanoparticles. The plant extract is mixed with AgNO₃, and then it is incubated. The extract is kept in microwave oven for exposure of heat, then it is dried and powdered. The synthesized dried powder is confirmed as nanoparticles by color transformation. The characterization of silver nanoparticles was studied by UV-Vis spectroscopy, FTIR, XRD & TEM. The silver nanoparticles synthesized were generally found in size 1-100 nm. The average size of synthesized silver nanoparticles is found to be 15.98 nm using XRD data by Scherrer's formula, which is approximately similar as the size obtained in TEM Analysis 16.32 nm. In total, the AgNPs prepared are safe to be discharged in the environment and possibly utilized in processes of pollution remediation. AgNPs may also be efficiently utilized in Anti-inflammatory activity of Pharmaceutical research to obtain better result of plant as shown by our study. The Anti-inflammatory activity of silver nanoparticles was tested on human blood cells which confirms that the plant mediated synthesis of silver nanoparticles have a significant Anti-inflammatory effect on human blood cells.</p> <p>Keywords: Silver Nanoparticles, UV-Vis Spectroscopy, FTIR, TEM, XRD, Anti-Inflammatory, Human Blood Cells, etc.</p> <p>1. References:</p> <ol style="list-style-type: none"> Nowack, "Nanosilver revisited downstream", Science, vol. 330, pp. 1054-1055, 2010. R. Kaegi, B. Sinnet, S. Zuleeg, H. Hagendorfer, E. Mueller, R. Vonbank, et al., "Release of silver nanoparticles from outdoor facades", Environ. Pollut., vol. 158, no. 9, pp. 2900-2905, 2010. Y.S. El-Temsah, E.J. Joner, "Impact of Fe and Ag nanoparticles on seed germination and differences in bioavailability during exposure in aqueous suspension and soil", Environ. Toxicol., vol. 27, pp. 42-49, 2012. Song JY, Kim BS. "Rapid biological synthesis of silver nanoparticles using plant leaf extract". Bioprocess Biosyst (2009). Bar H, Bhui DK, Gobinda SP, Sarkar PM, Pyne S, Misra A. "Green synthesis of silver nanoparticles using seed extract of Jatropha curcas". Physicochem Eng Aspects (2009). Harekrishna Bar, D.K.B., Gobindasahoo P, priyanka Sarkar, Sankar PD., "Green synthesis of silver nanoparticles using latex of Jatropha curcas" (2009). Shaogui Guo, Jianguo Zhang, Honghe Sun, Jerome Salseet al., The draft genome of watermelon (Citrullus Lanatus) and resequencing of 20 diverse accessions. Nature Genetics. 2013; 45:51-58. Krishnaraj C, Jagan EG, Rajasekar S, Selvakumar P, Kalaichelvan PT, Mohan N (2010) Synthesis of silver nanoparticles using Acalypha indica leaf extracts and its antibacterial activity against water borne pathogens. Colloids Surf B: Biointerfaces 76:50-56. Shukla VK, Pandey S, Pandey AC (2010) Green synthesis of silver nanoparticles using neem leaf (Azadirachta indica) extract. In: Proceedings of International Conference On Advanced Nanomaterials And Nanotechnology. ICANN-2009, Guwahati, Assam (India). 9-11 December 2009. Namratha N, Monica PV (2013) Synthesis of silver nanoparticles using Azadirachta indica (Neem) extract and usage in water purification. Asian J Pharm Tech 3:170-174. Lalitha A, Subbaiya R, Ponmurugan P (2013) Green synthesis of silver nanoparticles from leaf extract Azadirachta indica and to study its anti-bacterial and antioxidant property. Int J Curr Microbiol App Sci 2:228-235. Singhal G, Bhavesh R, Kasariya K, Sharma AR, Singh RP (2011) Biosynthesis of silver nanoparticles using Ocimum sanctum (Tulsi) leaf extract and screening its antimicrobial activity. J Nanoparticle Res 13:2981-2988. Philip D, Unni C (2011) Extra cellular biosynthesis of gold and silver nanoparticles using Krishna tulsi (Ocimum sanctum) leaf. Phys E 43:1318-1322. 			1-6
2.	Authors:	Abdelzاهر E. A. Mostafa, Waleed M.F. Tawhed, Mohamed R. Elshahat		
	Paper Title:	Performance Assessment of Asphalt Pavement mix Modified by Nano-Silica and Nano-Clay		
	<p>Abstract: In recent years, Nano Technology started to be utilized in many civil engineering applications and one emphasis was in highway pavements. Nano-materials are used to improve the quality and behavior of bitumen in different conditions. This research represents the results obtained from an experimental program designed to study the improvement of asphalt mix characteristics when using nano-materials. In this study, the nano-materials used were nano-silica, kaolinite nano-clay, and montmorillonite nano-clay by percents of (1, 3, 5, 7, and 9%) by weight of bitumen. Rheological properties of nano-modified bitumen namely; penetration, softening, flash point, and viscosity were studied. Furthermore, the mechanical properties of asphalt mixes constructed using nano-modified bitumen were studied, namely; stability, flow, compression stress, modulus of elasticity, and indirect tensile strength. From the results, it was observed that using nano-materials improve the rheological properties of bitumen in the form of decrease in penetration by 26% and increase in softening, flash point, and viscosity by 29%, 8%, and 6% respectively. In addition, nano-modified bitumen improves the mechanical properties of asphalt mix in the form of increase in stability, compressive strength, and indirect tensile strength by 37%, 40%, and 90%. Essentially, the recommended optimum percentages of nano-modified bitumen used in asphalt mix are 7% nano-silica, 9% kaolinite nano-clay, and 9% montmorillonite nano-clay.</p> <p>Keywords: Hot Asphalt Mix; Nano-Materials; Nano-Silica; Nano-Clay</p>			7-11

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	<p>Paper Title: Heat Exchanger Rating Models for Isothermal CSTR SO₃ Hydration using Vanadium Catalyst</p>	
3.	<p>Abstract: This work deals with the development of design models for heat exchanger rating in catalytic sulphur trioxide hydration process at isothermal condition exploiting the Abowei and Goodhead derived continuous adsorption tower (CAST) heat generation per unit volume equations at constant temperature. Shell and Tube heat exchanger is invoked for this studies resulting to novel design equations which were stochastically examined and found to be capable of simulating the rating performance dimensions as a function of kinetic parameters. The rating performance models were further generalized to inculcate fractional conversion functionality. The novel design models were simulation to evaluate the overall heat transfer coefficient, mass flow rate of cooling fluid, tube side cross flow area and tube side film coefficient using Matlab R2007B within the operational limits of conversion degree at constant temperature. The heat exchanger is used for the removal of heat generated per reactor unit volume utilizing water as cooling fluid, enters the shell side at 25oC flowing counter currently to the tube side at exit temperature of 85oC in order to maintaining 97oC isothermal condition. The configuration of the exchanger is U-tube type and is three (3) shell and six (6) tube passes. The results of the rating dimensions showed a dependable relationship with fractional conversion at constant temperature for various reactor radius and number of tubes.</p> <p>Keywords: CAST, heat exchanger Rating, isothermal, hydration, sulphur trioxide.</p> <p>References:</p> <ol style="list-style-type: none"> G. T. Austin, "Shreve's Chemical Process Industrial," in Reaction Rates in Catalytic Cracking of Petroleum, Industrial Engineering Chemistry. 5th ed. Vol. 45 (6), Blanding, F. H, Ed. New York: McGraw-Hill, 1984, pp. 1186-1197. Duecker and West, "Manufacture of Sulphuric Acid," New York: Reinhold, 1975. K. C. Faith, "Industrial Chemistry," 3rd ed, New York: John Wiley & Sons, 1965. pp. 747-755 S. Foust, et al., "Principles of Unit Operations," 1st ed. Pennsylvania: John Wiley & Sons Inc., 1960. pp. 223 – 225. W.L. Nelson, "Petroleum Refinery Engineering, 4th Edition," Singapore: McGraw-Hill Book Company, 1985. pp 557. E. E. Ludwig, "Applied Process Design for Chemical & Petrochemical Plants," Vol. 3, Texas: Gulf Publishing Company, 1965. pp 69 and 146. J.P. Homan, "Heat Transfer," 5th ed, Tokyo: McGraw-Hill Kogakusha Ltd, 1981. pp. 25. D.Q. Kern, "Process Heat Transfer," Tokyo: McGraw-Hill, Kogakusha Ltd, 1950. Pp 63, 129 and 711. J.F. Richardson, and J.M. Coulson, "Chemical Engineering, Vol.1, 5th ed, Oxford: Butherworth-Heinemann, 1998. pp 350. J.R. Simonson, "Engineering Heat Transfer," Cambridge: The Macmillan Press Ltd, 1978. pp. 3. G.M. York Fair, J.C. Geyer, and D.A. Oken, "Water Purification and Waste water Treatment, and Disposal," vol. 2, Water and waste water Engineering, New York: Wiley, 1968. T.O. Goodhead and M.F.N. Abowei, "Modelling of Semi Batch Reactor Adsorption Tower for Sulphur Trioxide Hydration using Vanadium Catalyst," International Journal of Scientific and Engineering Research, Volume 5, Issue 8, September 2014. M.F.N. Abowei, and T.O. Goodhead, "Isothermal Continuous Stirred Adsorption Tower (CSAT) for Vanadium Catalyst Based Sulphur Trioxide Hydration Process," International Journal of Engineering Sciences & Research Technology; Vol. 3(10) October, 2014. pp 45-60 T.O. Goodhead and M.F.N. Abowei, "Design of Isothermal Plug Flow Reactor Adsorption Tower for Sulphur Trioxide Hydration using Vanadium Catalyst," International Journal of Innovative Science and Modern Engineering (IJISME), Volume 2, Issue 9, October 2014, pp 9-16. T. O. Goodhead and M.F.N. Abowei, "Modelling of Non-isothermal Plug Flow Reactor Adsorption for Sulphur Trioxide Hydration Using Vanadium Catalyst," International Journal Technology Enhancement and Emerging Engineering Research (IJTEEE), Volume 2 Issue 9, October 2014. T. O. Goodhead and M.F.N. Abowei, "Modelling of Non-Isothermal CSTAT for Sulphur Trioxide Hydration using Vanadium Catalyst," International Journal of Engineering and Technology UK, Volume 4, issue 9, October, 2014. pp1-27. Danner and Daubert, "Manual for Predicting Chemical Process Design Data", ALCHE, New York, 1983 	12-20

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Paper Title: Possibilities of use of Gamete Breeding for Selecting of Plants Resistant to Water Deficiency

Abstract: Creating a selective pressure during growth of the male gametophyte and selection microspores under selective conditions with obligatory receipt of haploid structures of constant form , that is, doubled haploid lines with given properties is one of the tasks of biotechnology and the goal of our research. Using ABA when pollen haploid breeding the most defensible way since this hormone plays a key role in the response to water stress . Pollen haploid breeding using ABA efficient way also because ABA is a fertility control.

Keywords: haploid, doubled haploids, anther culture, stress, microspores, sporophyte, gametophyte, osmotic tolerance, selection.

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