

# Discovery

## About the Cover



### ABOUT THE COVER

Metal oxide nanoparticles have attracted tremendous interest as corrosion inhibitor due to their high surface area on metal surfaces. It is well known that zinc oxide nanoparticles (ZnONPs) have higher reactivity on basic and acidic solution. This article presents a method of synthesizing zinc oxide nanoparticles using *Nypa fruticans* (NIPA) starch and zinc oxide nanoparticles' effect on corrosion inhibition in steel. Steel substrates were prepared and immersed in 0.5 M NaCl aqueous solution at 30 °C. The corrosion inhibition efficiency of 25% ZnONPs was determined by weight loss measurement, atomic force microscopy (AFM), scanning electron microscopy (SEM) and electron impedance spectroscopy (EIS) methods. Weight loss measurement was calculated and evaluated within 7 days and suggested that ZnONPs are effective as corrosion inhibitor. The surface morphology of the steel in the absence and presence of ZnONPs was investigated using Atomic Force Microscopy (AFM) and Scanning Electron Microscopy (SEM) techniques and the outcomes indicated a formation of a protective layer over the steel substrate with the ZnONPs. The Electron Impedance Spectroscopy (EIS) showed that charge transfer controls the corrosion process. The results and analyses of this work indicated that a zinc oxide nanoparticle is effective as corrosion inhibitor in steel. (Ref: Janet H Agresor, Karina Milagros R Cui-Lim. *Nypa fruticans* (NIPA) starch filled with zinc oxide nanoparticles as corrosion inhibitor in steel. *Discovery*, 2018, 54(273), 360-367).

## ARTS & HUMANITIES

---

### **The decline of Ekpe masquerade amongst the Efik speakers**

Morenike Folabalogun

Masquerade traditions amongst the Efik speakers in Nigeria, is an interesting theme for discussion in art history. The scope of this paper is to direct attention to that aspect of Efik culture that is deeply rooted in the masquerade traditions and the importance of the masquerade's cult. This paper examines specifically the Ekpe masquerade, their duties, their regalia, art, symbol and performance. The paper intends to bring awareness and fill any existing gap. The methodology applied in this research is qualitative, which includes oral interviews, analytical; using intrinsic and contextual methods, internet resource materials and literature. Efik culture follows the general patterns of masquerading traditions in African societies. The traditional masquerades are seen, as ancestors and revered as intermediaries to God. The masquerades traditionally are regarded as custodians of history, religion, tradition, myths, norms and values. Their subjects see them as deities; to wade off the ills within individuals and community's at large, unity is established within communities, rules and regulations are adhered to. The dread of been sanctioned by a masquerade cult, culturally is an abomination in tradition and attracts sanctions. Difficult matters arising and sensitive disputes are settled by masquerade cults in the Efik land, the culture and its ideals are reinstated. Their performance brings alive the cultural values of the societies / communities.

*Discovery*, 2018, 54(273), 324-329

---

### **Graphology: An Expressive Poetic Style of Deviation in Niyi Osundare's Poetry**

Tambari Ogbonanwii Dick

Graphological analysis of poetry has found its way into the poetic away from the tradition that governs the analysis of poetry. As a psychological representation of the writer's state of being, it projects and illuminates the hidden meaning of an expression through the visual concept. Niyi Osundare as one of the foremost "Alter Native Poetic Tradition" poets has copiously introduced graphic mode of writing into his literary works to reflect his immediate environment, history, social and cultural traditions. The use of more than one literary device at a time is typical of Osundare as exhibited in some of his works with graphologically deviant structures. Linguistic elements in a good work of art interrelate as patterns of a system and such patterns should be describable at various linguistic levels. The patterns thus created should make significant inputs in terms of beauty and meaning in the literary work.

*Discovery*, 2018, 54(273), 330-335

---

## SOCIAL SCIENCE

---

### **Youth Participation in Electoral Processes**

Chigozie Azunna, Sam Botchway

The study was carried out to provide an understanding of the participation of the Municipality's youth in the local electoral processes. The objective of the study measured and examined the extent of youth participation in the local electoral processes of the Municipality, investigated and identified factors that prevents the youth from participating in electoral processes within the Municipality. The study applied a qualitative research methodology, questionnaires and interviews were used to collect data. A number of factors posed challenges to the youth and hinder their participation in electoral processes. These challenges emanated from negative attitudes of the youth towards politics. Also, employment/income, age, gender and race were some salient factors backed by poor education background, poverty and unemployment. The study recommends that the youth in the Municipality should be educated by their parents, teachers, church elders and the Mafikeng community to enable them acquire skills and positive attitude towards participating in the local electoral processes.

*Discovery*, 2018, 54(273), 336-341

---

## ENGINEERING

---

### **Assessment of passive cooling techniques in all lecture theatres of Federal University of Technology Minna, Niger state**

Kolo YW, Olagunju RE

The inadequacy of conventional energy sources couple with the ever increasing energy costs in the phase of global warming; it is therefore, imperative to reinvent natural means to attain optimal cooling for comfort in buildings. Effective learning environment (physical), stimulate better dissemination and assimilation of information in a conducive and comfortable indoor space. The need for thermal comfort in a learning environment such as lecture theatre plays tremendous benefits to human health; good ventilation/ air quality affects body metabolism rate, which thereafter affects the quality of learning. This study assessed passive cooling techniques adopted in the design of all the lecture theatres of Federal University of Technology, Minna which enhance the indoor spaces used for learning. To achieve the aim of the study, the various passive cooling techniques used in building designs in Federal University of Technology (FUT), Minna were identified and examined. The study employed both primary and secondary sources of data collections. Observation schedule was used based on the sample size. The study revealed that all lecture theatres in FUT Minna, adopted between 64% to 82% of heat gain control measures. While between 6% to 17% are the considerations for heat loss control measures utilized in the design of all the lecture theatres. The study recommends that, all passive cooling techniques should be careful analysed, and the most suitable should be applied in lecture theatres and building designs in general; in conjunction with the prevailing environmental challenges.

*Discovery*, 2018, 54(273), 342-352

**Determination of Interdisciplinary Relationship among Political Science, Social sciences and Public Administration: Perspective of Theory and Practice**

Md Nazirul Islam Sarker, Bouasone Chanthamith, Jhensanam Anusara, Nazmul Huda, Md Al Amin, Liu Jiachen, Most Nasrin

The main purpose of the study is to explore the relationship among Political Science, Social sciences and Public Administration in terms of theory and practice. It also explains about a long debate among scholars of political science, social sciences and public administration about the boundary of disciplines. This study is qualitative in nature and based on secondary sources like journal article, books, disciplinary magazines and related websites. It has also used renowned databases like web of science, science direct, Springer link and Scopus databases. This study finds out that there is concrete relationship among three disciplines in terms of theory and practice. Among them social sciences are a major discipline which covers major areas of political science and public administration. In case of research activities, there is no such demarcation among three disciplines though public administration uses some theories and models from social sciences and political science. It also argues that public administration incorporates various knowledge, model and theories of other disciplines as an interdisciplinary science but it still faces identity challenges and practical life affairs. This article will contribute the solution of existing long-term debates about the interdisciplinary matters.

*Discovery*, 2018, 54(273), 353-359

PHYSICAL SCIENCE

---

***Nypa fruticans* (NIPA) starch filled with zinc oxide nanoparticles as corrosion inhibitor in steel**

Janet H Agresor, Karina Milagros R Cui-Lim

Metal oxide nanoparticles have attracted tremendous interest as corrosion inhibitor due to their high surface area on metal surfaces. It is well known that zinc oxide nanoparticles (ZnONPs) have higher reactivity on basic and acidic solution. This article presents a method of synthesizing zinc oxide nanoparticles using *Nypa fruticans* (NIPA) starch and zinc oxide nanoparticles' effect on corrosion inhibition in steel. Steel substrates were prepared and immersed in 0.5 M NaCl aqueous solution at 30 °C. The corrosion inhibition efficiency of 25% ZnONPs was determined by weight loss measurement, atomic force microscopy (AFM), scanning electron microscopy (SEM) and electron impedance spectroscopy (EIS) methods. Weight loss measurement was calculated and evaluated within 7 days and suggested that ZnONPs are effective as corrosion inhibitor. The surface morphology of the steel in the absence and presence of ZnONPs was investigated using Atomic Force Microscopy (AFM) and Scanning Electron Microscopy (SEM) techniques and the outcomes indicated a formation of a protective layer over the steel substrate with the ZnONPs. The Electron Impedance Spectroscopy (EIS) showed that charge transfer controls the corrosion process. The results and analyses of this work indicated that a zinc oxide nanoparticle is effective as corrosion inhibitor in steel.

*Discovery*, 2018, 54(273), 360-367