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Judul Publikasi Ilmiah (Artikel) : The Influence Of Type Of Functional Groups On The Adsorption Selectivity Of Ionic Imprinted Polymer (IIP) Fe  
 Jumlah Penulis : 4 orang  
 Status Pengusul : penulis pertama/utama  
 Penulis Jurnal Ilmiah : **M Cholid Djunaidi**, Retno A.L., Pardoyo, Meta D.A  
 Identitas Jurnal Ilmiah a. Nama Jurnal Ilmiah: Oriental Journal of Chemistry  
 b. Nomor ISBN /ISSN : ISSN : 0970 - 020X, ONLINE ISSN : 2231-5039  
 c. Volume, Nomor, Bulan, Tahun : Volume 33 (6)Volume 32, Agustus 2017 (1)  
 d. Penerbit : Scientific Publisher, India  
 e. DOI artikel (jika ada) : DOI : <http://dx.doi.org/10.13005/ojc/330635>  
 f. Alamat web jurnal : <http://www.orientjchem.org/vol33no6/the-influence-of-type-of-functional-groups-on-the-adsorption-selectivity-of-ionic-imprinted-polymer-iip-fe/>  
 g. Terindeks di SCOPUS (category : Q3), Thomson Reuters, Index Copernicus, USASOPUS (The Netherlands), UGC Approved Journals, UGC Approved Journals,, Harvard Library, dsb  
 e. Jumlah Halaman : 6 (2992-2997)

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2. Ruang lingkup dan kedalaman pembahasan:	: Artikel ini menyajikan hasil penelitian mengenai sintesis polimer ionik diterapkan dm proses pemisahan ion logam berat Fe(3+) sehingga masih dalam lingkup jurnal (environmental chemistry). Kesimpulan tidak sesuai dg tujuan penelitian. Sintesis PE dan PA seharusnya tdk masuk dm artikel ini krn pernah dipublikasikan sblmnya. Hasil penelitian dibahas kurang mendalam, tdk ada perbandingan dg penelitian terdahulu dan tdk didukung dg pustaka yang baik. Walaupun dalam naskah bab pembahasan terdapat 8 sitasi (75 %) dari 12 daftar pustaka, namun penulis cenderung mengulangi menjelaskan prosedur percobaan (skor = 8,5).
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Oriental Journal of Chemistry  
Volume 33, Issue 6, 2017, Pages 2992-2997

## The influence of type of functional groups on the adsorption selectivity of ionic imprinted polymer iron (Article) (Open Access)

Djunaidi, M.C., ✉ Lusiana, R.A., Pardoyo, Arini, M.D. 👤

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Chemistry Department, Faculty of Science and Mathematics, Diponegoro University, Semarang, Indonesia

### Abstract

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The selectivity of Ionic Imprinted Polymer (IIP) Fe metal ion using functional polymers of eugenol derivatives was undertaken through the adsorption process. The forms of functional polymers were polyeugenol (PE), acetic polieugenoxo acid (PA) and poly tiophen-2-methyl-2-eugenoxo acetate (PFMEA). The purposes of this research were to know the influence of functional groups on the functional polymer of eugenol derivatives to the adsorption selectivity of IIP involving imprint cavity. The method in this research is the Ion Imprinted polymer (IIP) produced a metal ion imprint bound with the polymer, locked by Ethylene dimethacrylate (EDMA) then removed from the polymer to produce imprint selective to the ion imprinted. The adsorption selectivity of iron in PA was higher than PE and PFMEA. Analysis of surface area shows that IIP PA has larger surface area compared with NIP. The adsorption selectivity of Fe was higher on Fe-Cr than Fe-Cd and Fe-Pb. © 2017 Oriental Scientific Publishing Company. All Rights Reserved.

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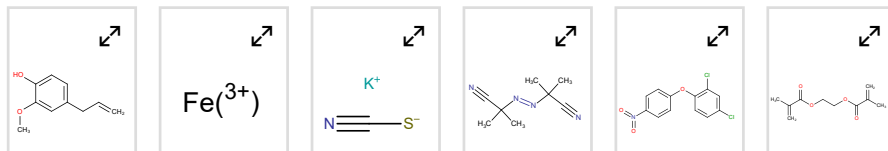
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Ethylene dimetachrylate Ionic imprinted polymer (IIP) Polyeugenol Selective adsorption

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Synthesis of Fe(III)-imprinted polyeugenol using polyethylene glycol diglycidylether as cross-linking agent for sorption of Fe(III)

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Kamisah D Pandiangan<sup>1</sup> , Wasinton Simanjuntak<sup>1</sup>, Mita Rilyanti<sup>1</sup> Novesar Jamarun<sup>2</sup> and Syukri Arief<sup>2</sup>  
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Eli Rohaeti<sup>1</sup>  and Anna Rakhmawati<sup>2</sup>


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Retno Ariadi Lusiana<sup>1</sup> , Wahyu Putri Protoningtyas<sup>1</sup>, Anugrah Ricky Wijaya<sup>2</sup>, Dwi Siswanta<sup>3</sup> Mudasar<sup>3</sup> and Sri Juari Santosa<sup>3</sup>

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**Role of Cetyltrimethyl Ammonium Bromide on Enhanced Adsorption and Removal of Alizarin Red S using Amino-Functionalized Graphene Oxide**

Wisn Chananchana<sup>1</sup>, Prawit Nuengmatcha<sup>2</sup> and Saksit Chanthai<sup>1</sup> 

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**Synthesis and Anti-Inflammatory Activity of Hydrazide-Hydrazones Bearing Anacardic Acid and 1,2,3-Triazole Ring Based Hybrids**

A. L. V. Kumar Reddy<sup>1</sup>  and Niren E. Kathale<sup>2</sup>

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**Effect of Dimethoxy-Methane (C<sub>3</sub>H<sub>8</sub>O<sub>2</sub>) on Combustion Characteristics of a Direct Injection Diesel Engine with Variable Compression Ratio Fuelled with Biodiesel Blends with Diesel (C<sub>10,8</sub>H<sub>18,7</sub>)**

M. Prabhakar<sup>1</sup>, S. Sendilvelan<sup>2</sup>  and J. Francis Xavier<sup>3</sup>


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**Elemental Influence of Eucalyptus Bark Pellet Ash on Corrosion of Tube in Small Boiler**

Pinit Jirukkakul<sup>1</sup>  and Weerachai Arjham<sup>2</sup>

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**QSAR Studies of Lanosterol Synthase Inhibitors as Potential Antihypercholesterolemic Compounds**

Divya G Nair<sup>1</sup>, V.L.Pushpa<sup>2</sup>, K. Kurien Thomas<sup>1</sup> and K. B. Manoj<sup>2</sup>  
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### Synthesis of Copper-Chitosan Nanocomposites and its Application in Treatment of Local Pathogenic Isolates Bacteria

Sohier M.Syame<sup>1,2\*</sup> , W. S. Mohamed<sup>3</sup>, Rehab K. Mahmoud<sup>4</sup> and Shimaa T. Omara<sup>1</sup>

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### Determination of Related Substances in Cabazitaxel using Reverse Phase- Liquid Chromatography Method

Bavireddi Mohan, R.S.K.Sharma, S.V.Murali Mohan Rao and N.V.S.Venugopal

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### Adsorption Of 4-Chlorophenol from Aqueous Solution Onto Iraqi Bauxite and Surfactant-Modified Iraqi Bauxite: Equilibrium, Kinetic, and Thermodynamic Studies

Muna A. Al-Kazragi, Dhafir T.A. Al-Heetimi and Takialdin A. Himdan

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### The Influence of type of Functional Groups on the Adsorption Selectivity of Ionic Imprinted Polymer (IIP) Fe

Muhammad Cholid Djunaedi , Retno Ariadi Lusiana, Pardoyo and Mela Dian Arini

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### Plant Generated Silver Nanoparticles and their Antibacterial Effect in Combination with Levofloxacin and Amikacin

Shahnaz Majeed<sup>1</sup> , Mohmmad Danish<sup>2</sup>, Nur Aaliya Binti Khairudin<sup>1</sup> and Gouri Kumar Dash<sup>1</sup>

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### Synthesis and Characterization of Biodegradable Film Chitosan and Carboxymethyl Chitosan to Substitute Silver Wound Healer Plaster

Amri Setyawati<sup>1</sup> , Indriana Kartini<sup>2</sup>, Deni Pranowo<sup>2</sup> Dan Lisna Junaeni Muiz<sup>3</sup> and Syafitri Hasyati<sup>2</sup>

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### In Silico Study, Synthesis, and Cytotoxic Activity of Esterification of Eugenol and Gallic Acid Against HT-29 Cell Line

Fadilah<sup>1</sup>, Arry Yanuar<sup>2</sup> , Ade Arsianti<sup>1</sup>, Retnosari Andrajati<sup>2</sup> and Rafika Indah Paramita<sup>1</sup>

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**Effect of Modified Clay on the Morphological and Thermal Properties of PLA/PBAT Nanocomposites**Mohd Junaedy Osman<sup>1</sup> , Nor Azowa Ibrahim<sup>2</sup> and Wan Md Zin Wan Yunus<sup>3</sup>[\[ HTML Full Text \]](#) [\[ Abstract \]](#) [\[ PDF \]](#) [\[ XML \]](#)DOI : <http://dx.doi.org/10.13005/ojc/330639> Views: 648  PDF Downloads: 787**Non Bonded Interactions in a Cylindrical Capacitor of (M, N) @ (M', N') @ (M'', M''') three Walled Nano Carbon Nanotubes**Nabieh Farhami, Majid Monajjemi  and Karim Zare[\[ HTML Full Text \]](#) [\[ Abstract \]](#) [\[ PDF \]](#) [\[ XML \]](#)DOI : <http://dx.doi.org/10.13005/ojc/330640> Views: 220  PDF Downloads: 540**Effect of Milling on Physicochemical Properties of Usnic Acid Isolated from Usnea sp.**Erizal Zaini<sup>1</sup> , Rahmita Khairun Nisak<sup>1</sup>, Rany Dwi Utami<sup>1</sup>, Lili Fitriani<sup>1</sup> and Friardi Ismed<sup>2</sup>[\[ HTML Full Text \]](#) [\[ Abstract \]](#) [\[ PDF \]](#) [\[ XML \]](#)DOI : <http://dx.doi.org/10.13005/ojc/330641> Views: 473  PDF Downloads: 648**The Effect of Sodium Hydroxide on Chemical and Mechanical Properties of Corn Husk Fiber**Nasmi Herlina Sari<sup>1</sup> , I. N. G. Wardana<sup>2</sup>, Yudy Surya Irawan<sup>2</sup> and Eko Siswanto<sup>2</sup>[\[ HTML Full Text \]](#) [\[ Abstract \]](#) [\[ PDF \]](#) [\[ XML \]](#)DOI : <http://dx.doi.org/10.13005/ojc/330642> Views: 2,368  PDF Downloads: 1091**Conditions for Establishing the Optimal-Efficient Scheme of the Process of Flushing of Heat Supply Systems**N. A. Vysotskaya , B. N. Kabylbekova, K. A. Bekzhigitova, R. Spabekova and K. T. Kurbanbekov[\[ HTML Full Text \]](#) [\[ Abstract \]](#) [\[ PDF \]](#) [\[ XML \]](#)DOI : <http://dx.doi.org/10.13005/ojc/330643> Views: 160  PDF Downloads: 477**Spectrophotometric Determination of Co(II), Ni(II) and Cu(II) Complexes with Schiff Base Containing Nitrogen and Sulphur Donor Sites**Sanjay Kumar<sup>1</sup>, Ritika Kumari<sup>2</sup> and B. K. Rai<sup>3</sup>[\[ HTML Full Text \]](#) [\[ Abstract \]](#) [\[ PDF \]](#) [\[ XML \]](#)DOI : <http://dx.doi.org/10.13005/ojc/330644> Views: 325  PDF Downloads: 517**Green Synthesis and In Vitro Anti Oxidant Activity of 6-aryl-quinazolin-4(3H)-ones via Suzuki Cross Coupling**Shankaraiah Pagilla<sup>1</sup> , Siddhartha Marupati<sup>1</sup> and Kishore Nani<sup>2</sup>[\[ HTML Full Text \]](#) [\[ Abstract \]](#) [\[ PDF \]](#) [\[ XML \]](#)DOI : <http://dx.doi.org/10.13005/ojc/330645> Views: 252  PDF Downloads: 488**Antitermitic Activity of Cinnamomum Parthenoxylon leaves Against Coptotermes Curvignathus**Morina Adfa<sup>1</sup> , Anwar Sanusi<sup>1</sup>, Syalfinaf Manaf<sup>2</sup>, Irfan Gustian<sup>1</sup> and Charles Banon<sup>1</sup>[\[ HTML Full Text \]](#) [\[ Abstract \]](#) [\[ PDF \]](#) [\[ XML \]](#)DOI : <http://dx.doi.org/10.13005/ojc/330646>



## Evaluation of Calcium Aluminate/Calcium Phosphate Based Biocements as Root-end Filling Material

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### ABSTRACT

Nano-particles of pure single phase calcium aluminate (CA) were prepared via solid state reaction at high temperature. An ultra-pure nano-size hydroxyapatite (HA) prepared by sol-gel method was used to formulate a composite of 1:1 CA: HA. Setting times, micro-hardness, bulk density, calcium ion and phosphorus ion concentration, XRD, FTIR and scanning electron microscopy (SEM) were investigated. The results showed that the substitution of 50% by weight of pure calcium aluminate cement (CA) by nano-size hydroxyapatite (HA) has a retardation effect on setting process. The use of artificial saliva solution as hydration medium enhances the hydration process of both synthesized calcium aluminate based materials due to the formation of more hydrated compounds. Curing of calcium aluminate cement in hot and humid conditions, resulting in hardness loss and high porosity due to the conversion process, in which the compounds  $CAH_{10}$  and  $C_2AH_8$  (hexagonal crystals) are converted into the more stable compound  $C_3AH_6$  (cubic crystals). The SEM studies indicated that the presence of nano-particles of hydroxyapatite in CA/HA composite facilitated the precipitation of hydroxyapatite-like active layer, suggesting that pure CA cement has some distinctive physico-mechanical properties make it suitable for use as root end filling materials in dental applications.

**Keywords:** Nano-calcium aluminate – Nano-hydroxyapatite –Gibbsite –Root end material.

### INTRODUCTION

Bioceramics that have been developed during the last five decades are especially used for repairing the skeleton bone systems as well as in dental applications<sup>1</sup>. These bioceramics comprising

five main chemically bonded ceramics groups; Ca-phosphates, Ca-silicates, Ca-aluminates, Ca-carbonates and Ca-sulphates<sup>2,3</sup>. This investigation will be dealt with only two systems of the above mentioned five groups; those are calcium aluminate and calcium phosphate.



## Development of Zirconia Substituted 1393 Bioactive Glass for Orthopaedic Application

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### ABSTRACT

Zirconia was used as a bone substitute, since it has excellent mechanical properties. It is also good bioinert to bone tissue. In this study, we report on zirconia substituted 1393 bioactive glass. In novel melt-derived "1393" Bioactive glass (53 SiO<sub>2</sub>, 6Na<sub>2</sub>O, 12 K<sub>2</sub>O, 5MgO, 20CaO, and 4 P<sub>2</sub>O<sub>5</sub> wt %) with CaO was doped by ZrO<sub>2</sub> for and were melted at 1400°C in alumina crucibles in electric furnace with air as furnace atmosphere. Bioactivity of these samples were analysed by put in the SBF for different time periods. Hydroxy Carbonate Apatite layer was developed and identified by FTIR, XRD and SEM. Chemical durability was also determined by weight loss method. Density of the samples were determined and found to increase significantly with increasing amount of (0-2 wt %) zirconia, reason is due to replacement of lighter element of CaO has been replaced by heavier element ZrO<sub>2</sub>. Finally, this investigation clearly concluded that ZrO<sub>2</sub> substituted bioactive glass would be potential biomaterials for biomedical applications.

**Keywords:** Bio-active glasses, Simulated body fluid, XRD, SEM, FTIR, pH, Chemical durability, Density.

### INTRODUCTION

Ceramics which are used for filling and rebuilding of non-healing bone defects and for healing of damaged or diseased parts of the muscular-skeletal system is termed as bio ceramics<sup>1</sup>. Bioinert (alumina, zirconia), bioactive (hydroxyapatite, glass, and glass-ceramics), resorbable (tricalcium phosphate) or porous for tissue in growth (hydroxyapatite-coated metals, alumina) may be used in the bio ceramic composites<sup>2</sup>. Several types

of bioactive glasses are developed over past years. Bioactive glasses (BG) have been known for their bioactive properties and their aptitude to form a strong bond to bone by formation of hydroxyapatite surface layer<sup>3</sup>. Bioactive glasses (BGs) such as "45S5 Bio-glass<sup>®</sup>" (45 SiO<sub>2</sub>, 24.5CaO, 24.5Na<sub>2</sub>O, 6 P<sub>2</sub>O<sub>5</sub> wt %) and "1393" (53 SiO<sub>2</sub>, 6Na<sub>2</sub>O, 12 K<sub>2</sub>O, 5 MgO, 20 CaO, and 4 P<sub>2</sub>O<sub>5</sub> wt %) compositions have been widely used for bone tissue engineering applications<sup>2,4</sup>. Hench *et al.*, examined the in vitro bonding mechanism with synthetic material



## Studies of Stereo-selective Cyclo-additions and Transformations of Substituted 2-cyclopenten-1-one with Chiral Anthracene Templates

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### ABSTRACT

The chiral (*S*)-9-(1-methoxyethyl), (*R*)-9-(1,2-dimethoxyethyl) and 9-(1*R*, 2*R*)-(1,2-dimethoxypropyl) anthracenes were synthesised and used for the thermal Diels-Alder reaction with cyclopentene-3,5-dione. Unlike the maleic anhydride and *N*-substituted maleimides, the cyclo-adducts were obtained with high regio-selectivity as a single diastereomer. The X-ray structure of the cyclo-adduct showed an enol form but the <sup>13</sup>C NMR showed resonances for two cyclopentanone carbonyl groups suggesting the solution structure is in the diketone form. Stereo-controlled studies using organomagnesium additions to the carbonyl groups resulted in hydrolytic cleavage of the enol ether and elimination of water to give  $\alpha$ -alkylketone anthracene adducts. These were unsuccessful in preparing chiral cyclopentenone core structures.

**Keywords:** Cyclopentenone, cyclopentene-3,5-dione, chiral anthracene, organomagnesium.

### INTRODUCTION

The cyclopentenone skeleton has been reported in diverse biological active compounds. For example, prostanoids such as clavulone I and clavulone II<sup>1</sup> isolated from marine natural products and exhibiting strong cytotoxicity. Untenone A<sup>2</sup> isolated from the Okinawan marine sponge *Plakortis sp.* which inhibites cell proliferation of L1210 leukaemia (IC<sub>50</sub> = 0.4  $\mu$ g/mg) and mammalian

DNA polymerases (pol.  $\alpha$  and  $\beta$ ), and human terminal deoxynucleotidyl transferase (TdT).<sup>3</sup> Recently, TEI-9826,<sup>4</sup> an antitumor agent in preclinical trials, has also been prepared.

Many strategies have been developed to synthesise cyclopentenones including the Nazarov cyclisation,<sup>5</sup> the Pauson-Khand reaction,<sup>6</sup> metal-catalysed cyclisation,<sup>7</sup> and Diels-Alder or retro Diels-Alder reactions using anthracene.<sup>8</sup> Thus, the