

International Journal Of Current Engineering And Scientific Research (IJCESR)

ISSN PRINT-2393-8374,ISSN ONLINE-2394-0697

DOI-10.21276/Ijcesr

[Home](#)

[Editors](#)

[Recent Issues](#)

[Topic](#)

[Submission](#)

[Monographs](#)

[Contact](#)

Indexed By

HOME

International Journal of Current Engineering And Scientific Research (IJCESR) is a leading international journal for publication of new ideas founded by academicians, educationist, engineers and corporate people. The research results and fundamental advancement are all aspects of innovative Research in Engineering & Technology and various engineering disciplines, etc.

IJCESR is an open access, peer reviewed international journal which provides an Academy medium for the advancement of research results that support high level learning and research in the field of Engineering and Technology.

IJCESR provides the academic community and industry for the submission of original research and applications related to Various Engineering discipline and Advanced Technologies.

Aim:

International Journal of Current Engineering And Scientific Research (IJCESR) is an open access journal, basically the aim of this journal to promote the new Innovative ideas in all fields of Engineering and Technology. Basically, this Journal will help to promote all Innovations in Engineering and Technology on one platform so that if anybody wants to integrate their ideas with other field of technology, they can implement it with the help of this Journal.

Scope:

The scope of the IJCESR is to provide an academic medium and an important reference for the advancement and dissemination of research results that support high-level learning, teaching and research in the fields of engineering, science and technology. Original theoretical work and application-based studies, which contributes to a better understanding of engineering and technological challenges, are encouraged.

DOI:10.21276/ijcesr



[Home](#) | [Contact Us](#)

Copyright ©International Journal of Current Engineering And Scientific Research (IJCESR)



International Journal Of Current Engineering And Scientific Research (IJCESR)

ISSN PRINT-2393-8374,ISSN ONLINE-2394-0697

DOI-10.21276/Ijcesr

[Home](#)

[Editors](#)

[Recent Issues](#)

[Topic](#)

[Submission](#)

[Registration](#)

[Monographs](#)

[Contact](#)

IMPACT FACTOR

IARC(JCRR)=0.916
GIF=0.695
SIF=0.73
JIF= 0.9
ICV 2015= 63.71
TOTAL=3,241

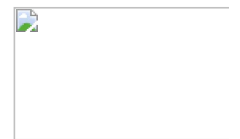
Indexed By



VOLUME 5 ISSUE 1 (PART-II) (JANUARY 2018) | PUBLICATION DATE:13TH JANUARY 2018

- 1 RADIAL DISTRIBUTION OF THE ATOM AND ION DENSITIES IN THE COPPER VAPOUR LASER DISCHARGE
Authors: A. P. Pachkawade
- 2 INFLUENCE OF CR 3+ION SUBSTITUTION ON STRUCTURAL AND ELECTRICAL PROPERTIES OF NICKEL FERRITE NANOPARTICLES
Authors: A.D.Tayade, G. R.Jadhao, Dr.M.C.Sable
- 3 STUDY OF GROUND WATER QUALITY FOR IRRIGATION IN SOME VILLAGES OF YAVATMAL DISTRICT, MAHARASHTRA (INDIA)
Authors: Wanjari A. J.
- 4 OSTRACODS DIVERSITY OF JUTPANI LAKE OF DHARNI (MELGHAT), DISTRICT AMRAVATI (M.S.), INDIA)
Authors: Shelekar, A. L.
- 5 TOXIC EFFECTS OF PARTHENIUM HYSTEROPHORUS ON HISTOLOGY OF GILLS OF FRESHWATER FISH LABEO ROHITA.
Authors: Vikhar A.M, R.G.Jadhao
- 6 LUMINESCENCE PROPERTIES OF SRAL2B2O7:EU3+ PHOSPHOR FOR GREEN LIGHTING TECHNOLOGY
Authors: A.N. Yerpude, V.V.Shinde, V.R.Panse, S. J. Dhoble, N.S.Kokode
- 7 ENVIRONMENTAL IMPACT ASSESSMENT
Authors: S.P. Ajmire, Dr. N.S. Raman, A. Z. Chitade
- 8 DIELECTRIC PARAMETERS OF LIQUID POLYMERS USING DIELECTRIC RELAXATION SPECTROSCOPY
Authors: B.D.Watode, A.C.Kumbarkhane
- 9 REVIEW ON THE PHOTOLUMINESCENCE PROPERTIES OF RARE-EARTH ACTIVATED PHOSPHORS FOR LED APPLICATIONS
Authors: Bhawana N. Gangne, Govind B. Nair, S. J. Dhoble
- 10 WET CHEMICAL PREPARATION AND PHOTOLUMINESCENCE IN Cs2MCl4:Eu2+ (M = Ba, Ca) PHOSPHOR FOR pLED APPLICATION
Authors: C.D. Mungmode, M. M. Bhavne, B.V. Tupte, D.H. Gahane, S.V. Moharil
- 11 INVESTIGATION ON CALLUS FORMATION IN CAREYA ARBOREA ROXB
Authors: D. M. Wankhade, Dr. S. P. Rothe
- 12 THE SYNTHESIS AND EVALUATION OF COMBINE DRUG ACTION OF CODEINE AS SUPPLEMENTARY DRUG WITH DAKIN-WEST B-ACETAMIDOKETONES
Authors: Rameshwar S. Dhamak, Deepak. M. Nagrik, Shrikant S. Patil
- 13 Luminescence studies of Dy doped MgSrAl10O17 phosphor
Authors: Praveen K.Mishra, Vibha Chopra, Govind B.Nair, Surendra P.Mishra, R.K.Paliwal S.J. Dhoble
- 14 IMPACT OF ZINC SUBSTITUTION ON STRUCTURAL AND OPTICAL BEHAVIOR OF MIXED FERRITES
Authors: Dilip Badwaik
- 15 MATHEMATICAL MODELLING OF TRANSIENT THERMOELASTIC PROBLEM OF A CYLINDER
Authors: Dilip Kamdi, Navneet K Lamba
- 16 Sr2SnO4:Sm3+ PHOSPHOR FOR SOLID STATE LIGHTING
Authors: Deepak Taikar
- 17 THERMOLUMINESCENCE CHARACTERISTICS OF Ce3+ IN HALOSULPHATE PHOSPHOR SYNTHESIZED BY SOLID STATE DIFFUSION REACTION
Authors: G. N. Nikhare, S. C. Gedam, S. J. Dhoble
- 18 SYNTHESIS, PHOTOLUMINESCENCE AND THERMOLUMINESCENCE OF YAlO3:Eu3+ PHOSPHOR
Authors: I.H.Dhadade, Vibha Chopra, S.J. Dhoble, S.V. Moharil
- 19 SYNTHESIS AND LUMINESCENCE PROPERTY OF Na2CaMg(PO4)2:Dy3+ PHOSPHOR
Authors: J. A. Wani, S. J. Dhoble, N.S.Kokode, N.S.Dhoble
- 20

DOI:10.21276/ijcesr



- AUTO COMBUSTION SYNTHESIS AND PHOTOLUMINESCENCE OF MN²⁺ DOPED ZINC SILICATE NANO-PHOSPHORS
Authors: J.T.Ingle, R.P.Sonekar, S.K.Omanwar
- 21 ELECTROCHEMICAL PERFORMANCE OF MECHANOCHEMICALLY SYNTHESIZED La_{0.85}Si_{0.2}MnO₃
Authors: K. R. Nagde, S. S. Bhoga
- 22 PL CHARACTERISATION OF BaAl₂O₄:Gd³⁺ FOR PHOTOTHERAPY LAMP
Authors: Kapil Dev, R. G. Kunghatkar, M. Aynyas, Vibha Chopra, S. J. Dhoble
- 23 Eu³⁺ ACTIVATED LiAlPO₄Cl NOVEL RED HALOPHOSPHATE PHOSPHOR
Authors: Ashish Akojwar, P.K. Naktode, K.N. Shinde, N.S. Kokode
- 24 A SPECTROSCOPIC CHARACTERIZATION OF NOVEL CaAl_{3-x}(PO₄)₃F₂:Ce³⁺ (0.1 x 5) PHOSPHOR BY FACILE COMBUSTION METHOD
Authors: D.B. Zade, Ashish Akojwar, P.K. Naktode, K.N. Shinde, N.S. Kokode
- 25 SYNTHESIS AND OPTICAL PROPERTIES OF Yb³⁺ doped Li₃Ba₂La₃(MoO₄)₈
Authors: M.M. Bhawe, B.V.Tupte, C.D. Mungmode, D.H.Gahane, S.V.Moharil
- 26 PHYTOCHEMICAL INVESTIGATION OF DIFFERENT EXTRACTS OF WITHANIA SOMNIFERA ROOT
Authors: Mahesh A. Pawar
- 27 ENERGY TRANSFER IN K₂Ca(SO₄)₃:Ce³⁺, Dy³⁺
Authors: Urvashi Manik, S. C. Gedam, S. J. Dhoble
- 28 A SURVEY OF GASTROINTESTINAL PARASITES OF CERVUS UNICOLOR (SAMBAR) IN THE KATEPURNA SANCTUARY, AKOLA
Authors: Milind Shirbhate, Amrita Shirbhate
- 29 SYNTHESIS AND CHARACTERIZATION OF CDO NANOPARTICLES BY MICROWAVE ASSISTED IRRADIATION TECHNIQUE
Authors: N. B. Thakare, F. C. Raghuvanshi, V. S. Kalyamwar, Y. S. Tamgadge, S. N. Mendhe
- 30 EFFECT OF MALATHION ON PROTEIN LEVEL OF FRESH WATER FISH OPHIOCEPHALUS STRIATUS
Authors: Gijare, S. S., V.T. Tantarpare
- 31 SYNTHESIS AND CHARACTERIZATION OF ZnO and SnO₂ DOPED POLYANILINE NANO COMPOSITES
Authors: Hamjade PT, Khaire ND, Motke SG
- 32 EFFECT OF MYCORRHIZAL BIOFERTILISER AND CHEMICAL FERTILIZER IN GLYCINE MAX.
Authors: Pradhnya Khapekar
- 33 SYNTHESIS AND CHARACTERIZATION OF POLYANILINE NANOWIRES BY A NOVEL ELECTROCHEMICAL POLYMERIZATION TECHNIQUE.
Authors: Prashant Gedam, Mahendra Shirsat
- 34 A REVIEW ON SYNTHETIC UTILITIES OF GALACTOSYL DERIVATIVES IN CARBOHYDRATE CHEMISTRY
Authors: Dr. Prashant R. Mahalle
- 35 IDENTIFICATION OF SQUAMOUS CELL CARCINOMA AND ITS PATHOLOGICAL DIAGNOSIS
Authors: Priya Deole
- 36 THERMO ACOUSTICAL EXCESS PARAMETERS OF BINARY LIQUID MIXTURE OF 1,4 DIOXANE AND MAGNESIUM HYDROXIDE AT 7 MHZ FREQUENCY
Authors: Bhat V R, Bhandakkar V D, Pawar N.R., Chimankar O.P, Bhat P.V
- 37 AN EFFICIENT Li₂SrSiO₄:Tb³⁺ PHOSPHOR FOR SOLID STATE LIGHTING
Authors: P.P. Bhure, S.P. Puppalwar, S.J. Dhoble
- 38 AUTOMATIC ALARM SYSTEM USING ANDROID SMART PHONE FOR COLLEGE OR INSTITUTION OR INDUSTRY
Authors: R. D. Wakodkar, Dr. D. H. Gahane, Dr. N. S. Kokode
- 39 N-DIMENSIONAL DUST STATIC SPHERICALLY SYMMETRIC NON-VACUUM SOLUTIONS IN f (R) THEORY OF GRAVITY
Authors: R. K. Jumale, I. S. Mohurley, D. H. Gahane, Jyotsna Jumale
- 40 ULTRAVIOLET-VISIBLE STUDIES OF L-VALINE CAPPED CuO NANOPARTICLES
Authors: R. P. Ganorkar, D. A. Patil, S. D. Kadu, Y. S. Tamgadge, M. A. Mahure, N. B. Thakare
- 41 YTTRIUM OXIDE AS AN ENGINEERING MATERIAL
Authors: R.S.Ukare, R.R.Kurzeekar, G.D.Zade, S.J.Dhoble
- 42 SYNTHESIS AND GAS SENSING APPLICATION OF CONDUCTING POLYMER-POLYTHIOPHENE NANOCOMPOSITE
Authors: J. A. Tembhe, S. A. Waghuley
- 43 PHYTOPLANKTON DIVERSITY OF NANDGAON AND ARWAT LAKES OF CHANDRAPUR DISTRICT MAHARASHTRA, INDIA
Authors: S. C. Chunne, P. N. Nasare
- 44

- GEOLOGICAL APPLICATION OF Co(II), Ni(II), Cu(II) Cr(III), Mn(III), Fe(III), VO(IV), Zr(IV) and UO₂(VI) WITH SCHIFF BASE METAL COMPLEXES
Authors: S. R. Kelode, Y. K. Mawale
- 45 SYNTHESIS AND CHARACTERIZATION OF Tb³⁺ ACTIVATED Ba₃Si₆O₁₂N₂ PHOSPHOR
Authors: S.A.Fartode, Anoop Fartode, S.J.Dhoble
- 46 STUDY OF AMMONIA GAS SENSOR BASED ON SnO₂ AND ZnO NANOCRYSTALLINE COMPOSITE MATERIAL
Authors: S.G.Onkar, F.C.Raghuwanshi, V.S.Kalyamwar, S. D.Charpe.
- 47 SYNTHESIS AND ANTIMICROBIAL EVALUATION OF SOME NOVEL AND BIOLOGICALLY ACTIVE SCHIFF BASES BEARING A 1,3,4-THIADIAZOLE MOIETY
Authors: Prof. S.L. Kumbhare, Prof. V.H. Masand
- 48 DEVELOPMENTAL VARIATION OF INSECT ELAPHROTHRIPS PROCER (SCHMUTZ) (THYSANOPTERA: PHLAEOTHRIPIDAE)
Authors: Nagrale S.M.
- 49 SYNTHESIS AND PHOTOLUMINESCENCE PROPERTIES OF Er³⁺ -Yb³⁺ co-doped LiMgBO₃ PHOSPHOR
Authors: S.P. Hargunani, R. P. Sonekar, S. K.Omanwar
- 50 MODERN AGRICULTURE: CONCEPT AND IT'S BENEFITS
Authors: Dr. Shyam R. Dutonde
- 51 LAMPS HAVING WAVELENGTH SUITABLE FOR TREATMENT OF PHOTO-RESPONSIVE SKIN DISEASE VITILIGO
Authors: Dr. Swapnil S. Arsad
- 52 INVESTIGATION OF RHIZOSPHERE MYCOFLORA FROM SOME MEMBERS OF SOLANACEAE FAMILY
Authors: Madavi S.V., Wadekar M.B.
- 53 INFLUENCE OF CERIA DOPING ON STRUCTURAL AND OPTICAL PROPERTIES OF TIN OXIDE NANOPARTICLES
Authors: Sachin T. Bahade, Amrut S. Lanje, Satish J. Sharma, Amresh I. Prasad
- 54 ELECTRICAL CONDUCTIVITY STUDY OF THERMALLY STABLE NEWLY SYNTHESIZED TERPOLYMER
Authors: Sanjay N. Niley, Kiran P. Kariya, Baliram. N. Berad
- 55 SYNTHESIS AND CHARACTERISATION OF SOME NEW PYRAZOLINE DERIVATIVES AS ANTIMICROBIAL AGENTS
Authors: Santosh S.Ambhore, Mangesh.V.Kadu
- 56 FABRICATION OF SPHERICAL NANOCRYSTALLINE MnCo₂O₄ VIA SOL- GEL CITRATE ROUTE FOR SUPERCAPACITOR APPLICATION
Authors: Santosh J Uke, Vijay P. Akhare, Satish P. Meshram, Devidas R. Bambole, Dindayal S. Thakre, Gajanan N. Chaudhari
- 57 EFFECTS OF VERMIWASH ON SEED GERMINATION AND SEEDLING VIGOUR IN VARIETY OF WITHANIA SOMNIFERA (L) DUNAL
Authors: Sheikh Shagufta Amir, Dakhane Vimal P
- 58 GREEN CHEMISTRY BOON TO PROTECT ECOSYSTEM IN THE WORLD
Authors: Prof. Ku. Shaila S. Wagh
- 59 CHROMIUM (VI) COMPLEXES OF GLUTAMINE – STUDY OF SYNTHESIS AND CHARACTERIZATION OF ITS PROPERTIES FOR VIABILITY AS FOOD SUPPLEMENT
Authors: Sangita D. Katre
- 60 MECHANOLUMINESCENCE PRODUCED DURING CLEAVAGE OF ELEMENTAL SEMICONDUCTORS
Authors: Shalini Patil
- 61 SYNTHESIS AND ANTIMICROBIAL STUDY OF PYRAZOLINE FROM FLAVANONES AND HYDRAZINE
Authors: Shrikant A. Patil, MangeshV. Kadu
- 62 BIODIVERSITY OF ZOOPLANKTON AND ITS IMPORTANCE FOR FISH PRODUCTION ON MAJALGAON DAM RESERVOIR DISTRICT BEED. MAHARASHTRA STATE. INDIA.
Authors: Sitaram B. Ingole
- 63 INTERACTIONS OF DMSO WITH AQUEOUS SOLUTIONS OF AN ASSORTMENT OF DIHYDROFORMAZAN IN DIFFERENT CONCENTRATION AT 298.15 K
Authors: Smita S.Kharkale (Bhuyar), Sudhir S. Bhuyar, Pratibha S. Agrawal, Lalitmohan J. Paliwal
- 64 SYNTHESIS AND PL CHARACTERISATION OF Alq₃: Eu ORGANIC PHOSPHOR
Authors: Sunil A. Bhagat
- 65 TO STUDY THE INHIBITION EFFICIENCY OF THE CHELATING AGENTS AND THEIR METAL COMPLEXES
Authors: Bhagat.T.M.
- 66 SYNTHESIS AND PHOTOLUMINESCENCE PROPERTIES OF THE HIGH-BRIGHTNESS EU³⁺ DOPED Li_{0.5}Al_{0.5}Mg₂(MoO₄)₃ RED PHOSPHORS
Authors: B.V.Tupte, M.M. Bhawe, C.D. Mungmode, D.H.Gahane, S.V.Moharil
- 67

- THERMOLUMINESCENCE ANALYSIS AND CALCULATION OF TRAPPING PARAMETERS OF SrZnF₄:Dy³⁺-PHOSPHOR
Authors: Tushar R. Shelke, Sumedha Tamboli, VibhaChopra, S. J. Dhoble
- 68 EVALUATION OF SENSORY QUALITIES AND NUTRITIONAL ABILITIES OF GUAVA RTS (READY TO SERVE) BEVERAGE ADDED WITH BETEL LEAVES AND MINT LEAVES.
Authors: Rushi Panajkar, Kapil Ubharhande, Sakshi Bang
- 69 ARANEIDAE (ORB WEAVERS) FROM SALBARDI FOREST DIST. AMRAVATI, (MS), INDIA.
Authors: U. S. Deshmukh
- 70 PREPARATION OF PROTEIN RICH COST EFFECTIVE WEANING FOOD BY FORTIFYING SOYBEAN SPROUT FLOUR WITH PIGEON PEA AND COWPEA SPROUTS FLOUR
Authors: Adhirath Telkhade, Sakshi Bang, Linatai Vaidya, Kapil Ubarhande
- 71 PREPARATION AND CHARACTERIZATION OF FE₂O₃ MODIFIED NANOCRYSTALLINE CR₂O₃ BASED THICK FILMS
Authors: P.M. Chandak , F.C. Raghuvanshi , V.S. Kalyamwar , V.D. Kapse
- 72 SYNTHESIS OF SMFEO₃ PEROVSKITE OXIDE BY SOL-GEL METHOD
Authors: R.B.Mankar, V.D.Kapse
- 73 DIVERSITY OF PHYTOPLANKTON OF FRESHWATER OF PAINTAKLI DAM OF BULDHANA DISTRICT (M.S.), INDIA
Authors: Kakde V.R.
- 74 INFRARED SPECTRAL STUDIES OF TICO SUBSTITUTED YTYPE STRONTIUM HEXAFERRITES SYNTHESIZED BY SOL-GEL AUTOCOMBUSTION METHOD
Authors: Vijay V. Warhate, D. S. Badwaik
- 75 MUSHROOM CULTIVATIONS; SUSTAINABLE AGRICULTURE FOR RURAL LIVELIHOOD AND IT'S CHALLENGES
Authors: Dr.Vilas Balajirao Ganipurkar
- 76 MICROWAVE DIELECTRIC RELAXATION STUDY OF BINARY MIXTURES OF POLYETHYLENE GLYCOL MONOMETHYLETER-WATER
Authors: R. N. Mathpati, P. G. Hudge, K. S. Kanse, Y. S. Joshi, A. C. Kumbarkhane
- 77 SYNTHESIS AND CHARACTERIZATION OF L-VALINE CAPPED SN DOPED CU NANOPARTICLES
Authors: Y. S. Tamgadge, R. P. Ganorkar, A. B. Malpe, A. V. Rewatkar, P. P. Gedam, G. G. Muley
- 78 MICROBIAL DISEASES OF FISHES AND THEIR BIOLOGICAL CONTROL USING BACILLUS THURINGIENSIS WITH SPECIAL REFERENCES TO CHANNA MARULIAS AND CLARIAS BATRACHUS: A REVIEW
Authors: Bodhe Y.G., Wadhai V.S.
- 79 ANALYSIS OF VARIATION OF ACID CATALYST CONCENTRATION ON PROPERTIES OF LOW-K THIN FILMS
Authors: Yogesh S. Mhaisagar, Bhavana N. Joshi, Ashok M. Mahajan
- 80 COMBUSTION SYNTHESIS AND THERMOLUMINESCENCE STUDIES OF γ -ray IRRADIATED K₂B₄O₇: Cu PHOSPHOR
Authors: Z. S. Khan, N. B. Ingale, S. K. Omanwar
- 81 OBSERVATIONS ON IMPORTANT MICROSCOPIC CHARACTERS FOR AUTHENTICATION OF AN ETHNOMEDICINAL PLANT ABELMOSCHUS FICULNEUS (L.) WIGHT AND ARN
Authors: Ujwala G. Malode
- 82 STRUCTURAL AND GAS SENSING STUDIES OF CHROMIUM DOPED COBALT ALUMINATE SPINEL COMPOSITE
Authors: Sarita V. Agnihotri, V.D. Kapse, F.C. Raghuvanshi, V.S. Kalyamwar
- 83 BIANCHI TYPE-V COSMOLOGICAL MODEL OF NON-LINEAR SPINOR FIELD COUPLING WITH ELECTROMAGNETIC FIELD
Authors: V R Patil, N S Bayaskar, G.U.Khapekar, S.A.Bhojane
- 84 ANTIBIOGRAM STUDY OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS AND DEMONSTRATION OF VANCOMYCIN RESISTANCE AMONG MRSA ISOLATES FROM TERTIARY CARE HOSPITAL, NAGPUR (M.S.) INDIA
Authors: Y. W., Wadhai, V. S. , Bhandari, P
- 85 MICROBIAL CONTAMINATION OF CURRENCY NOTES IN CIRCULATION
Authors: A. D. Mate, Garode A. M
- 86 QUALITIES OF ALCOHOL MENTIONED IN AYURVED
Authors: A. G. Kulkarni
- 87 OCTAHEDRAL MOLECULAR SIEVE (K-OMS-2) SUPPORTED METAL NANOPARTICLES FOR CATALYSIS
Authors: A. S. Nagpure, N. G. Gode, G. P. Juare, S. M. Sontakke
- 88 PHENOLOGICAL STUDY OF SOME SPECIES OF FABACEAE FROM BULDHANA DISTRICT, MAHARASHTRA (INDIA)
Authors: A.V. Wakode, Dr. M. M. Dhore
- 89 HAEMOGLOBIN CONCENTRATION AMONG THE PEOPLE IN SLUM AREA (AMRAVATI, INDIA): SURVEY & DISCUSSION

- Authors:** Archana B. Ingole (Ubhad)
- 90 A COMPARATIVE STUDY OF BODY COMPOSITION BETWEEN REGULARLY ACTIVE AND INACTIVE GROUPS OF SCHOOL GOING STUDENTS
Authors: Ashish Govindrao Barde
- 91 DETERMINATION OF MEDIAN TOLERANCE LIMIT (LC50) OF CLARIAS BATRACHUS FOR MERCURIC CHLORIDE
Authors: Bhise J.V.
- 92 AEROMYCOFLORA OF TWO RESIDENTIAL PLACES AT NAGPUR (MS) INDIA
Authors: Bhonde, M. C., Kalkar, S. A.
- 93 LYOLUMINESCENCE STUDY OF GAMMA-RAY IRRADIATED DY3+ ACTIVATED CAB4O7 PHOSPHORS FOR DOSIMETRY APPLICATIONS
Authors: G.C.Mishra , S.J.Dhoble , R.S.Kher
- 94 SYNTHESIS OF NANOPARTICLES FROM CLERODENDRUM PHLOMIDIS L. AND ITS ANTIMICROBIAL ACTIVITY
Authors: Dhulgande Govind Santoba, Ghogare Datta Subhashrao
- 95 SEASONAL VARIATION STUDY OF SENGGA (DOLLFUS, 1934) IN CHANNA GACHUA FROM AMRAVATI RESION
Authors: P. R. Gaikwad, S. R. Nagmote, Prof. Dr. M. B. Sonune
- 96 OCCURRENCE OF MYCOFLORA ASSOCIATED WITH CASHEW NUTS (ANACARDIUM OCCIDENTALE L.)
Authors: G.B. Hedawoo, Harsha V. Bijwe
- 97 ANT DIVERSITY IN WADALI FOREST PARK AND UPPER WARDHA OF AMRAVATI REGION
Authors: Jayashree Deepak Dhote
- 98 EFFECT OF THIOSULPHATE ORAL ADMINISTRATION ON GAMETOGENESIS OF THE SLUG, LAEVICAULIS ALTE.
Authors: Tayade D.V., R.G.Jadhao, Nagmote S.R.
- 99 DETECTION AND QUANTIFICATION OF MINERAL AND HEAVY METALS ANALYSIS IN LEAF OF CLEISTANTHUS COLLINUS FOR TOXICITY
Authors: Rajdip Utane, Sujata Deo
- 100 BACTERIOLOGICAL EVALUATION OF HONEY SOLD IN THE MARKET
Authors: V.R.Sapkal, Garode A.M.
- 101 PHYSICO-CHEMICAL AND PHYTO-CHEMICAL EVALUTION OF SOYMIDA FEBRIFUGA (ROXB A JUSS) USED BY HERBAL HEALERS FOR LIVESTOCK
Authors: Dr.Vanita U.Pochhi
- 102 BIOLOGICAL DETERMINATION OF BEAUTY SOAP
Authors: S.O. Wakade, Garode A. M.
- 103 THEORETICAL STUDY OF LASER STIMULATED THERMOLUMINESCENCE USING CO2 LASER
Authors: Manoj Kumar Prajapati, Upendra Singh
- 104 SYNTHESIS OF Sr DOPED ZnO BY USING CHEMICALLY MODIFIED ROUTE
Authors: A. U. Bajpeyee
- 105 APHRODISIAC ACTIVITY OF ACID PHOS ON MALE ALBINO RAT
Authors: C. K. Deshmukh, K. D. Ingle
- 106 DIVERSITY OF MICROFUNGI ASSOCIATED WITH PLANT LITTER OF VERIOUS PLANT FROM MELGHAT FOREST DURING WINTER SEASON
Authors: C.V. Dadgale
- 107 A METHODOICAL STUDY OF PHYSICOCHEMICAL CHARACTERIZATION OF FARMLAND SOIL OF MARKAND VILLAGE LOCATED IN NANDED DISTRICT IN MAHARASHTRA, INDIA
Authors: M.T. Sangole, A. A. Sangole, S. M. Thorat
- 108 ANTIMICROBIAL AND ANTIOXIDANT ACTIVITY OF THREE MEDICINALLY IMPORTANT CAPPARIS SPECIES FROM WESTERN MELGHAT REGION DHARNI (MS) INDIA
Authors: Khandare N A, Janjal S M, Patorkar T O
- 109 SYNTHESIS OF SILVER NANO-PARTICLES USING COPRECIPITATION METHOD
Authors: Amol Nande, Nitin Longadge, Nagma Sheikh, Swati Raut
- 110 ELECTROCHEMICALLY SYNTHESIZED COPPER OXIDE NANOPARTICLES AND THEIR ANTIMICROBIAL ACTIVITY
Authors: Sonali M. Janjal, Nitin A. Khandare, Anjali S. Rajbhoj, Suresh T. Gaikwad
- 111 SYNTHESIS OF SOME FLAVONE & PYRAZOLINE DERIVATIVE AND THEIR ANTIMICROBIAL AND PHYSICOCHEMICAL STUDY
Authors: V.D. Mane1, Shaikh Azeem, P.S. Pande, M.O. Malpani, H J Kharat

[Home](#) | [Contact Us](#)

Copyright ©International Journal of Current Engineering And Sceintific Research (IJCESR)



SYNTHESIS OF SmFeO_3 PEROVSKITE OXIDE BY SOL-GEL METHOD

R.B.Mankar¹, V.D.Kapse²

¹Department of Physics, Smt. Radhabai Sarada Arts, Commerce and Science College, Anjangaon Surji, Maharashtra, India

²Department of Physics, Arts, Science and Commerce College, Chikhaldara, Maharashtra, India

ABSTRACT

SmFeO₃ perovskite oxide was prepared by sol-gel method using citric acid and calcined at 850⁰ C for 4 hours. The sample was characterized by X-ray diffractometry, Scanning Electron microscopy and EDAX. The prepared sample had single phase perovskite structure. The lattice constant, unit cell volume and average grain size were calculated using XRD data. The surface morphology was studied from SEM images of the sample.

Keywords: SmFeO₃, perovskite, sol-gel method

I. INTRODUCTION

Presently environmental pollution has become a serious problem for human being. The hazardous gases emitting from auto and industrial exhaust are continuously contaminating the air quality. Therefore detection, measurement and control on these gases are strongly demanded all over the world. Variety of sensing techniques has been used to detect such harmful gases. Among them, scientists have shown a great practical interest in solid state metal oxide gas sensor. Different semiconducting gas sensing materials including complex materials have been investigated for ethanol, benzene, NO₂ and VOCs. However, their gas sensing properties such as sensitivity, selectivity and operating conditions are still unsatisfactory

Meanwhile, perovskite-type oxides were reported to have wide range of applications including gas sensors [1-4], solid oxide fuel cell [5], and catalysis [6]. Among various perovskite oxides, SmFeO₃ has shown great

technological versatility due to its variable physical properties for gas sensing applications. SmFeO₃ is perovskite type oxide with general formula ABO₃ (A: rare earth, B: transition metal) and has orthoferrite phase. Being p-type semiconducting material, its resistance decreases with the adsorption of oxidizing gases like O₃, NO₂, ethanol and increases with exposure to reducing gases like CO and H₂. So far, use of SmFeO₃ based semiconductor sensor is limited to only oxidizing gases due to its lower electrical conductivity and reduction stability for reducing gases [7-8]. Electrical conductivity and reduction stability is strongly affected by the nature of both the A-site cation and the B-site cation [9]. A bigger A-site cation provides greater reduction stability whereas doping at B-site improves the electrical conductivity. It was reported that doping of Ce at Sm site in SmFeO₃ enhances the reduction stability and results in new n-type semiconducting material [10]. Further doping at Fe site by Co, Ni and Mg has been reported for better conductivity and sensitivity [11-13]. Thus, ABO₃ type perovskite structure of SmFeO₃ makes it possible to obtain desirable sensitivity and selectivity by partial substitution at A-site and/or the B-site [14-19].

Various methods like sol-gel method, co-precipitation method, hydrothermal method have been studied for the synthesis of SmFeO₃ perovskite [20-23]. Many reports showed that SmFeO₃ perovskite powder prepared through a sol-gel method in citric system presented high sensitivity and selectivity [1]. In present paper, SmFeO₃ perovskite oxide was prepared by sol-gel method and its structure and morphology have been investigated.

II. METHODS AND MATERIAL

The fine powder of SmFeO_3 perovskite oxide was prepared by a sol-gel method. Chemicals used in the synthesis are samarium nitrate $\text{Sm}(\text{NO}_3)_3 \cdot 6\text{H}_2\text{O}$, iron nitrate $\text{Fe}(\text{NO}_3)_3 \cdot 9\text{H}_2\text{O}$ and citric acid monohydrate. Initially stoichiometric amounts of samarium nitrate, iron nitrate and citric acid monohydrate were mixed in the ratio 1:1:1 and grounded in Agate mortar for 30 minutes. Then ethylene glycol was added to the mixture under constant stirring at 75°C for 2 hours to obtain a sole which was then dried into a gel. The gel was dried in oven at 110°C for 12 hours and allowed to cool naturally. Finally, sample was calcined at 800°C for 4 hours.

III. RESULTS AND DISCUSSION

Fig. 1 depicts X-ray diffraction pattern of SmFeO_3 powder. The comparison of these X-ray diffraction pattern with the standard JCPDS card number 39-1490 confirms that the prepared powder has perovskite phase with orthorhombic symmetry and belong to space group $\text{Pnma}(62)$. Importantly single phase perovskite structure was observed without presence of secondary phases.

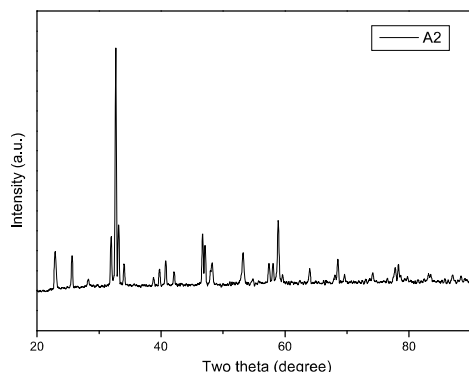


Figure 1 XRD pattern of SmFeO_3 powder prepared by sol-gel method

The lattice parameters of the sample were calculated from XRD pattern based on the formula $d = (h^2/a^2 + k^2/b^2 + l^2/c^2)^{-1/2}$, where (h, k, l) are indices of crystallographic planes, d is the interplanar distance and (a, b, c) are lattice parameters. For SmFeO_3 powder prepared by sol-gel method, lattice constants a, b and c is 5.604 \AA , 7.704 \AA and 5.397 \AA respectively. By means of Scherer's formula, $D =$

$0.89\lambda/\beta\cos\theta$ where λ is wavelength of X-ray, θ is diffraction angle and β is true half-peak width, the crystalline particle size was estimated and is found to be 50.08 nm . The volume of unit cell of prepared sample is 233.05 \AA^3

Fig 2 represents the SEM images of the sample to study its surface morphology. The micrograph indicates that the morphology of the particle is irregular because sintered material being crushed until powder form is obtained. The average size of particle is 100 nm .

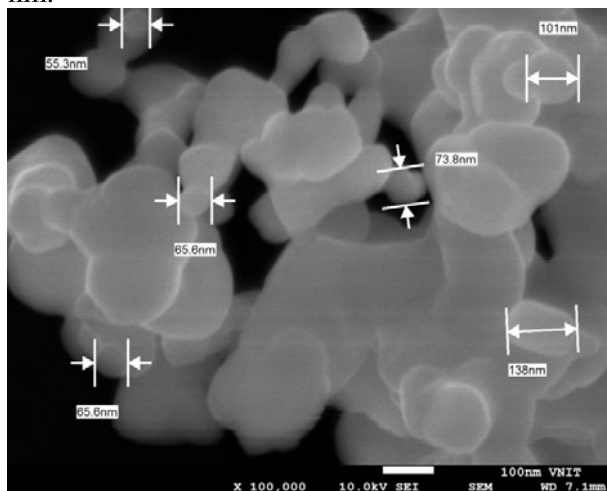


Figure 2: SEM of SmFeO_3 powder prepared by sol-gel method

IV. CONCLUSIONS

The results demonstrated here depict the possibility of synthesis of fine powder of SmFeO_3 perovskite oxide by sol-gel method in citrate system. XRD pattern confirms the presence of single phase orthorhombic perovskite structure. SEM analysis showed that material in powder form presented irregular morphology and different particle sizes.

REFERENCES

- [1] V. Lantto, S. Saukko, N.N. Toan, L.F. Reyes, C.G. Granqvist, Journal of Electroceramics 13 (1) (2004) 721–726.
- [2] Peng Song, Hongwei Qin, Ling Zhang, Kang An, Zhaojun Lin, Jifan Hu, Minhua Jiang, Sensors and Actuators B: Chemical B 104 (2) (2005) 312–316.
- [3] X. Jia, H. Fan, X. Lou, J. Xu, Appl. Phys. A 94 (2009) 837.
- [4] X. Liu, J. Hu, B. Cheng, H. Qin, M. Jiang, Sensors and Actuators B, 134 (2008) 483.

- [5] J.Molenda, K.Swierczek, W.Zajac, J.Power Sources 173(2007) 657
- [6] P.I.Cowin, C.T.G. Petit, R.Lan, J.T.S. Irvine, Adv.Mater 1 (2011) 314.
- [7]Y.Hosoya, Y.Itagaki, H.Aono, Sensor and ActuatorsB108(2005)198–201.
- [8]M.Mori,J.Fujita,Y.Itagaki,Y.Sadaoka,J.Ceram.Soc.Jpn.119(12)(2011) 926–928.
- [9] M.A. Pena, J.L.G. Fierro, Chem. Rev. 101 (2001) 1981–2017.
- [10]S.M. Bukhari, J.B. Giorgi, Solid State Ionics 180 (2009) 198–204.
- [11] Yoshiteru Itagaki, Masami Mori, Yuuki Hosoya, Hiromichi Aono, Yoshihiko Sadaoka Sensors and Actuators B 122 (2007) 315–320
- [12] Linfu Chena, Jifan Hua, Shaoming Fanga, Zhouxiang Hana, Ma Zhaoa,ZhanleiWua, Xing Liub, Hongwei Qinb Sensors and Actuators B, 139 (2009) 407–410
- [13]Xing Liu, Jifan Hu, Bin Cheng, Hongwei Qin, Minhua Jiang Sensors and Actuators B 134 (2008) 483–487
- [14]M.Ikeguchi,T.Mimura,Y.Sekine,E.Kikuni M.Matsukata,Appl.Catal.a290
- [15] X. Liu, J. Hu, B. Cheng, H. Qin, M. Jiang, Current Applied Physics 9 (2009) 613–617.
- [16] L. Chen, J. Hu, S. Fang, Z. Han, M. Zhao, ZhanleiWu, X. Liu, H. Qin, Sensors and Actuators B 139 (2009) 407–410.
- [17] S.M. Bukhari, J.B. Giorgi, The Journal of the Electrochemical Society 158 (2011) 1027–1033.
- [18] M. Zhao, H. Peng, J. Hu, Z. Han, Sensors and Actuators B 129 (2008) 953–957.
- [19] Masami Moria, YoshiteruItagaki , JunIsedaa, Yoshihiko Sadaokab, Tsuyoshi Uedac, Hirokazu Mitsuhashic, Mikiya Nakatanic Sensors and Actuators B 202 (2014) 873–877
- [20] J.W. Fergus, Sens. Actuators B 123 (2007) 1169–1179.
- [21] Tomohisa Tasaki, Satoko Takase, Youichi Shimizu Journal of Sensor Technology, 2 (2012), 75-81.
- [22] Ru Zhanga, Jifan Hua,, Ma Zhaoa, Zhouxiang Hana, Jianying Weia, Zhanlei Wua,Hongwei Qinb, Kaiying Wangc Materials Science and Engineering B 171 (2010) 139–143
- [23] Xing Liu, Jifan Hu*, Bin Cheng, Hongwei Qin, Minhua Jiang Current Applied Physics 9 (2009) 613–617.