LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : PROSIDING

Judul Karya Ilmiah (Prosiding) : TE and TM modes polaritons in multilayer system comprise of a PML-type magnetoeletric multiferroics and ferroelectrics

Nama/ Jumlah Penulis : 2 Orang

Status Pengusul : Penulis ke-1

Identitas Jurnal Ilmiah :

a. Judul Prosiding : 9th International Seminar on New Paradigm and Innovation of Natural Sciences and Its Application, ISNPINSA 2019

b. ISBN/ISSN : 1742-6596

c. Thn Terbit, Tempat Pelaks. : Oktober 2019, Semarang

d. Penerbit/Organiser : Institute of Physics Publishing

e. Alamat Repository/Web : https://iopscience.iop.org/issue/1742-6596/1524/1

Alamat Artikel : https://iopscience.iop.org/article/10.1088/1742-6596/1524/1/012032

f. Terindeks di (jika ada) : Scopus

Kategori Publikasi Jurnal Ilmiah : [√] *Prosiding* Forum Ilmiah Internasional
(beri ✓pada kategori yang tepat)   [ ] *Prosiding* Forum Ilmiah Nasional

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Reviewer		Nilai Rata-rata
	Reviewer I	Reviewer II	
a. Kelengkapan unsur isi prosiding (10%)	2,8	2,9	2,85
b. Ruang lingkup dan kedalaman pembahasan (30%)	8,9	8,9	8,9
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	8,6	8,6	8,6
d. Kelengkapan unsur dan kualitas penerbit/ prosiding (30%)	8,9	8,8	8,85
Total = (100%)			29,2
Nilai untuk Pengusul : 60% x 29,2 = 17,52			

Semarang, 17 Januari 2022

Reviewer 1

Prof. Dr. Heri Sutanto, S.Si., M.Si.
NIP. 197502151998021001
Unit Kerja : Universitas Diponegoro
Bidang Ilmu: Fisika Material

Reviewer 2

Prof. Dr. Kusworo Adi, M.T.
NIP. 197203171998021001
Unit Kerja : Universitas Diponegoro
Bidang Ilmu: Fisika Instrumentasi

Judul Karya Ilmiah (Prosiding) : TE and TM modes polaritons in multilayer system comprise of a PML-type magnetoeletric multiferroics and ferroelectrics
Nama/ Jumlah Penulis : 2 Orang
Status Pengusul : Penulis ke-1
Identitas Prosiding :

a. Judul Prosiding : 4th International Conference on Science and Engineering in Mathematics, Chemistry and Physics 2016, ScieTech 2016
b. ISBN/ISSN : 1742-6588
c. Thn Terbit, Tempat Pelaks. : Januari 2016, Bali
d. Penerbit/Organiser : Institute of Physics Publishing
e. Alamat Repository/Web : https://iopscience.iop.org/issue/1742-6596/710/1
   Alamat Artikel : https://iopscience.iop.org/article/10.1088/1742-6596/710/1/012037
f. Terindeks di (jika ada) : Scopus

Kategori Publikasi Makalah : [√] *Prosiding* Forum Ilmiah Internasional
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Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal Prosiding		Nilai Akhir Yang Diperoleh
	Internasional 30	Nasional	
a. Kelengkapan unsur isi prosiding (10%)	3		2,9
b. Ruang lingkup dan kedalaman pembahasan (30%)	9		8,9
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	9		8,6
d. Kelengkapan unsur dan kualitas terbitan /prosiding (30%)	9		8,8
Total = (100%)	**30**		**29,2**
Nilai Pengusul = 60% x 29,2 = 17,52			

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2. **Ruang lingkup dan kedalaman pembahasan:**
   Isi artikel sesuai dengan ruang lingkup seminar/prosiding 4th International Conference on Science and Engineering in Mathematics, Chemistry and Physics (ScieTech 2016). Data dari artikel telah dibahas secara jelas dan telah mengkaitkan hasil penelitian peneliti lain (ada 7 referensi yang disitasi) sehingga komprehensif dan mendalam.
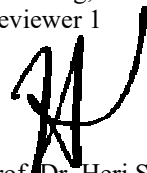3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:**
   Data-data yang diperoleh memadai dan cukup mutakhir. Metodologi penelitian diungkapkan dengan jelas dan sesuai dengan data yang diperoleh. Jumlah total referensi yang digunakan dalam penyusunan artikel ada 33 buah, dan hanya 4 referensi kategori mutakhir.
4. **Kelengkapan unsur dan kualitas terbitan/ prosiding:**
   Prosiding diterbitkan oleh IOP Publisher pada Journal of Physics: Conference Series, Volume 710. ISBN Prosiding: 978-1-5108-2421-8, ISSN: 1742-6588. Keterlibatan peserta lebih dari 4 negara, proses review dilakukan dengan baik.

Semarang, 8 Maret 2021
Reviewer 1

Prof. Dr. Heri Sutanto, S.Si.
NIP. 197502151998021001
Unit Kerja : Universitas Diponegoro
Bidang Ilmu: Fisika Material

LEMBAR
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KARYA ILMIAH : PROSIDING

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Hasil Penilaian *Peer Review* :

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d. Kelengkapan unsur dan kualitas terbitan /prosiding (30%)	9		8,9
Total = (100%)	**30**		**29,2**
Nilai Pengusul = 60% x 29,2 = 17,52			

Catatan Penilaian Paper oleh Reviewer :
1. **Kesesuaian dan kelengkapan unsur isi prosiding:**
   Makalah telah sesuai dengan petunjuk penulisan yang terdiri dari Title, Introduction, Kajian Secara Teoritis dan Simulasi, Conclusion, References. Ada keterkaitan antara struktur pada makalah yang ditulis dengan alur yang cukup jelas, subtansi sesuai dengan pengusul/anggota penulis pada bidang fisika material (skor=2,8).
2. **Ruang lingkup dan kedalaman pembahasan:**
   Makalah cukup bagus sesuai ruang lingkup seminar/prosiding 4th International Conference on Science and Engineering in Mathematics, Chemistry and Physics (ScieTech 2016), Bali, Indonesia, 30 – 31 January 2016. Pembahasan telah sesuai dengan hasil penelitian dan permasalahan cukup komprehensif dan melibatkan 7 referensi dalam pembahasaannya sehingga kedalaman cukup baik dan komprehensif (skor=8,9)
3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:**
   Data-data yang dituliskan pada makalah sudah menunjukkan ada kebaruan informasi dengan metodologi cukup memadai. Jumlah total referensi ada 33, kurang dari 10 tahun ada 4 referensi, sedangkan 29 referensi kadaluarasa, secara kuantitatif jumlah rujukan yang digunakan sudah cukup, akan tetapi mayoritas referensi sudah kadaluarsa (skor = 8,6)
4. **Kelengkapan unsur dan kualitas terbitan/ prosiding:**
   Prosiding diterbitkan pada Journal of Physics: Conference Series, Volume 710, hasil dari ScieTech 2016, Bali, Indonesia, 30 – 31 January 2016 yang diselenggarakan oleh Bina Nusantara University, ISBN: 978-1-5108-2421-8, ISSN: 1742-6588. Keterlibatan perserta lebih dari 4 negara, proses review cukup baik (skor = 8,9).

Semarang, 7 Oktober 2020
Reviewer

Nama Dr. Kusworo Adi, M.T.
NIP. 197203171998021001
Unit Kerja : Universitas Diponegoro
Bidang Ilmu: Fisika Instrumentasi

Certification of Presenter

This certificate entitles the holder to

Dr Vincensius Gunawan

of Paper ID/Title

146

TE and TM modes polaritons in multilayer system comprise of a PML-type magnetoelectric multiferroics and ferroelectrics

on

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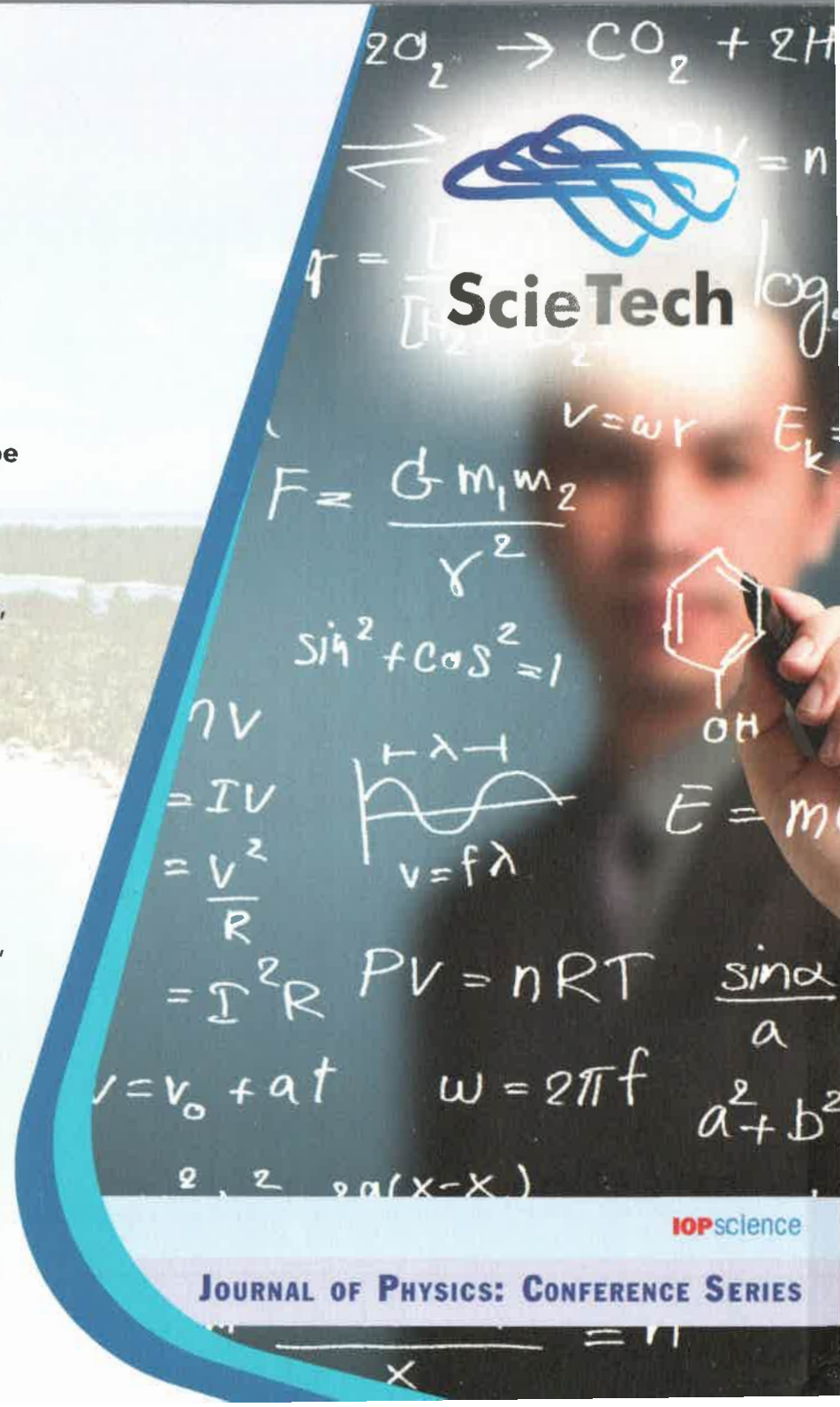(ScieTech 2016)

which were held in
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TE and TM modes polaritons in multilayer system comprise of a PML-type magnetoelectric multiferroics and ferroelectrics   (Conference Paper)   (Open Access)

Gunawan, V. ✉,   Widiyandari, H.

Jurusan Fisika, Fakultas Sains Dan Matematika, Universitas Diponegoro, Jl. Prof Soedarto, Tembalang, Semarang, Indonesia

Abstract

⌄ View references (33)

In this paper, we report our study on both bulk and surface polaritons generated in Multilayer system. The multilayer consists of ferroelectric and multiferroic with canted spins structure. The effective medium approximation is employed to derive the dispersion relation for both bulk and surface modes. Surface and bulk polaritons are calculated numerically for the case of Transverse electric (TE) and Transverse magnetic (TM) modes. Example results are presented using parameters appropriate for $BaMnF_4/BaAl_2O_4$. We found in both TE and TM modes, that the region where the surface modes may exist is affected by the volume fraction of the multiferroics. The region of the surface modes decrease when the volume fraction of the multiferroic is reduced. This region decrement suppress the surface polariton curves which result in shortening the surface modes curves.

SciVal Topic Prominence ⓘ

Topic: Polaritons | Left Handed | Antiferromagnet

Prominence percentile: 26.778   ⓘ

Indexed keywords

Engineering controlled terms: Ferroelectric materials Multilayers Phonons Photons Physical optics Volume fraction

Engineering uncontrolled terms: Dispersion relations Effective Medium Approximation Multi-layer system Multiferroics Surface polaritons TE and TM modes Transverse electrics Transverse magnetic modes

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Abraha, K., Smith, S.R.P., Tilley, D.R.

Surface polaritons and attenuated total reflection spectra of layered antiferromagnets in the Faraday configuration

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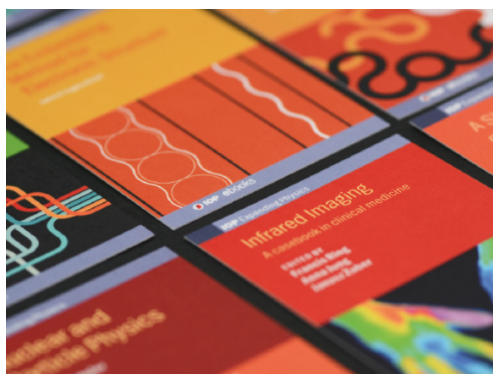
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Discovery Room, Discovery Kartika Plaza Hotel, Bali, Indonesia
30–31 January 2016

Keynote Speakers

1.

Prof. Dr Binayak Samader Choudhury, Indian Institute of Engineering Science and Technology, Shibpur

Title: Discontinuous Functions in Metric Fixed Point Theory

Discontinuous functions have featured in metric fixed point theory since the theory originated in the first quarter of the 20th century. Today these functions occupy a large portion of this expanding branch of mathematics. The present talk gives an account of the recent developments of this area of research along with some of its implications. The broad subject area of the talk is functional analysis.

Short Bio:

Professor Binayak S. Choudhury is Professor at the Department of Mathematics, Indian Institute of Engineering Science and Technology, Shibpur, West Bengal, India for the last 12 years. He has a brilliant academic career. He obtained his Master of Science and Doctorate degrees from the University of Calcutta, India. He has held several administrative posts and was entrusted with various responsibilities at a governmental level. He served his Institute as Head of the Department of Mathematics (2005–2008) and as the Dean of the Faculty of Science (2013–2015). His research interests are in pure and applied mathematics and theoretical physics ranging over subject areas like topology, functional analysis, real analysis, probability theory, nonlinear dynamics and chaos, equilibrium problems, relativity and cosmology, quantum information theory, foundations of

physics, mathematical biology, fuzzy systems and optimization and game theory, in each of which he has guided Ph.D. students. He has published nearly 200 research papers in reputed journals in addition to a good number of works published in conference proceedings. Until now 13 research students have obtained their Ph. D. degrees under his supervision and several other students are working with him. He is the recipient of several awards. He has delivered lectures in different parts of the world on topics both from theoretical physics and mathematics. He has keen interest in philosophy, language and literature, especially in English poetry and Sanskrit poetry (Kavya). He is also actively associated with the movement of the popularization of Sanskrit language.

2.

Yasuo Kadono, Graduate School of Technology Management of Ritsumeikan University, Japan

Title: Management of Software Engineering Innovation in Japan

The talk will be on the achievements of the software engineering discipline as represented by IT vendors in Japan in order to deepen understanding of the mechanisms of how software engineering capabilities relate to IT vendors' business performance and business environment from the perspective of innovation and engineering management. Based on the concepts of service science and science for society, the volume suggests how to improve the sophistication of services between the demand side, i.e., IT user companies, and the supply side, i.e., IT vendors, simultaneously.

The speaker will talk about a structural model including innovational paths, such as service innovation, product innovation and process innovation, and a measurement model including the seven software engineering capabilities: deliverables, project management, quality assurance, process improvement, research and development, human resource development and customer contact. They then designed research on software engineering excellence and administered it with the Japanese Ministry of Economy, Trade and Industry and Information-Technology Promotion Agency. Through statistical analyses of the results, they found that human resource development and R&D are significant fundamental conditions to improve the quality of the deliverables and that IT firms with large outputs, derived from high levels of human resource development, quality assurance, project management and process improvement, tend to sustain high profitability.

Short Bio:

Yasuo Kadono is a professor at the Graduate School of Technology Management of Ritsumeikan University, and a visiting professor at Tokyo University of Foreign Studies, Japan. He received his PhD in business administration at Tsukuba University. He also received his master's and bachelor's degrees in applied mathematics and physics at Kyoto University. He has extensive practical experience with McKinsey & Company, Accenture, Sumitomo Metal Industries, and Management Science Institute. He has also produced important research projects in academic, business, and government circles. Consistent with his academic and business career to date, his teaching and research interests include the management of technology, competitive strategy, and information technology.

3.

Prof. I Nyoman Suprapta Winaya, PhD., Mechanical Department, University of Udayana, Bali, Indonesia

Title: Fluidized bed technology using biomass and wastes fuels

The increased need to reduce carbon dioxide emissions to prevent global warming has led to an interest in biomass and solid waste as fuel sources. As a potential renewable energy resource, biomass and solid waste materials are receiving more attention worldwide. One feature of biomass fuels is their high volatile matter content, however, due to the high heat transfer from the bed material to the fuel, volatile matter evolution occurs very rapidly when fuel is fed into the bed. This indicates that the fuels are easier to ignite and to burn. Although the great ability of fluidized beds to conduct the combustion/gasification process has been confirmed by many researchers as well as several successful operating industrial plants, more research is still required to see extensive and flourishing progress, especially in how to minimize the effect of volatile matter. Some recent studies have been presented in the talk.

Short Bio:

I Nyoman Suprapta Winaya is a professor at Udayana University, Bali, Indonesia. He currently serves as Head of the Mechanical Engineering Department. Winaya received his bachelor's degree

from Udayana University, his master's from Dalhousie University of Canada and his Ph.D from Niigata University of Japan. His main research is into biomass using fluidized bed combustion and gasification systems. Dr. Winaya was appointed as a Professor in the field of energy conversion systems in 2013 by Indonesia's Ministry of Education and Culture at Udayana University. At presentl, he leads the Renewable Energy Research Laboratory especially in the field of gasification and biogas. He has approved some essential innovations of high volatile matter fuels especially using porous solids as a bed material. A new method has been developed to evaluate the horizontal dispersion of loaded solids at high bed temperatures that resemble those of commercial operations. As the first step to a scaling-up of the fluidized bed (FB) system using carbon loaded solids prepared by capacitant effect, the developed model is considered to be applicable to large scale FBs if the solid dispersion coefficient can be predicted. Prof. Winaya's passion is to transfer research results into industrial practice, having a commitment to spread an advanced knowledge around the globe. Prof. Winaya is a senate member of Udayana University, and a member of the Indonesian Association of Mechanical Engineering, Indonesian Association of Fuel Experts, Indonesian Association of Engineers, American Society of Mechanical Engineering, and Japanese Society of Chemical Engineering.

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Cryptanalysis of Password Protection of Oracle Database Management System (DBMS)

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Abstract. This article discusses the currently available encryption algorithms in the Oracle database, also the proposed upgraded encryption algorithm, which consists of 4 steps. In conclusion we make an analysis of password encryption of Oracle Database.

1. Introduction

One of the most characteristic features of the modern level of development of information technology is widespread computer networks. Computers, connected to the network, can significantly improve the effectiveness of the use of the computer system as a whole. Increase of productivity in such case is achieved through a network of information exchange, as well as by using on each computer general network resources [1]. The vulnerability of computer networks is connected with the support of different protocols of information exchange, with the length of communication channels. Therefore, on the first place we put the safety of the transferred information.

The classical scheme of databases' (DB) protection is divided into the following obligatory procedures [2]:

- Access control - each user, including the administrator, has an access only to the necessary for him information according to his position;

- Access protection - the user can obtain an access to the data, who passed the last procedure of identification and authentication;

- Encryption - you must encrypt both data transmitted on the network to protect from eavesdropping and data written to the media, to protect from the theft and unauthorized viewing media / changes without funds of database (DBMS) management system, an access auditing to the database - activities with critical actions should be recorded.

Access to the protocol should not be used by the users on which it is conducted. In the case of applications, used a multi-tier architecture, the security features also take place, with the exception of data protection on the media - this function is left on the database [3].

With all listed security features in one way or another feature are equipped by database and with Oracle applications, which distinguish them from competitors' products. Oracle implements the SSL protocol to encrypt data that is transferred from the customer databases to the database and back. The advantage of SSL is that it is the current Internet standard, and can be used by clients who do not work with protocols of Oracle Net Services [4].

2. The Scheme of Encryption in Oracle Database

In the Oracle database to create a password can be used the following set of symbols [7]:

1. The figures '0123456789'
2. The letters 'abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ'
3. The symbols! "# $% & () + '* - / :; <=>? _.

Influence of Temperature, Roughness and Washer Shape on Crevice Corrosion for 254 SMO Alloy

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Abstract. Effect of temperature, roughness and washer shape on 254 SMO alloy was applied to study the susceptibility of alloy's crevice corrosion. XPS measurements have been carried out to detect and define the products which formed on the surface of 254 SMO in 22% NaCl at 30oC at applied potential 600 mVSCE. The formation of Fe, Cr and Mo compounds which play a great role to protect the alloy was found.

1.Introduction

254 SMO is considered to be a very high austenitic stainless steel. It was originally developed for use in seawater and other aggressive chloride-bearing environments. Many parameters, such as temperature and crevice geometry, were used to obtain their effect on crevice corrosion.

An increase in temperature tend to stimulate corrosive attack by increasing the rate of electrochemical reactions[1]. For stainless steels and other alloys that are prone to pitting and crevice corrosion, an increase in temperature tends to facilitate initiation of these types of attack [1]. Many parameters that influence corrosion can vary with temperature: dissolved oxygen solubility, solution properties (e.g. viscosity and ion mobility), ferrous oxidation rate and thermodynamic properties of iron scale (leading to formation of different phases or compounds) [2].

Crevice geometry is one of the important factors in crevice corrosion susceptibility. The two dimensions that characterize a crevice, the gap and the depth or length exert a great deal of control on the initiation and propagation of crevice corrosion, in agreement with that in the other studies [3]. The current flow from the crevice to the outer surface is partially supported by the inward migration on anions such as Cl$^-$, which further lowers the pH. In these respects, the mechanisms of the crevice and pitting corrosion are similar. In view of this sequence, the crevice geometry parameters of gap width and depth become important [4]. The corrosion rate within the crevice increased as the crevice dimension decreases [5].

A simplified nonlinear model of the Marangoni instability in gas absorption

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Abstract. The process of gas absorption into initially motionless liquid layer is investigated. The convective instability caused by the temperature dependence of the surface tension. The critical time of transition of the process to unstable convective regime, as well as the intensity of mass transfer in a surface convection are estimated numerically. The mathematical model includes the equations of convective diffusion, thermal conduction and fluid motion. The problem was solved numerically in the two-dimensional formulation. In the coordinate along the interface the concentration of the absorbed substance is represented by three terms of the trigonometric Fourier series. A difference approximation of equations with an exponentially changing grid in the direction normal to the interface is used. The simulations results agree with the well-known experimental data on the absorption of carbon dioxide in water.

Introduction

In the well-known experiments for the physical gas absorption by liquid layer the process goes in diffusion mode, only to a certain critical time, and then turn into more intense convective [1-3]. A linear stability analysis of the absorption process by frozen-time assumption was performed in [2, 4]. In order to estimate the intensity of mass transfer in the convective mode a semi-empirical formula was used in [3]. Critical time obtained by frozen-time assumption is a stationary point of the process, corresponding to the beginning of the joint growth of perturbations of concentration of absorbable material, temperature and velocity of the fluid. Transition of the process to convective mode occurs at a later time when the disturbances will reach the necessary intensity. For the process of carbon dioxide absorption in water the critical time [1, 3] exceeds a stationary point about 1000 times. In [5] it is shown that the reason for the long delay is the high viscosity of the fluid. Curently no available numerical estimates of the critical time and the intensity of mass transfer in a surface convection obtained without involving semiempirical hypotheses. The purpose of this paper is to construct a simplified non-linear model to assess these characteristics, as well as checking its adequacy by comparison with experimental data.

2.   The formulation of the problem. The main equations

We consider non-stationary process of gas absorption by initially fixed bed fluid of infinite thickness. The liquid interacts with the gas phase, wherein component A is contained. The component

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The approximate solutions of nonlinear Boussinesq equation

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Abstract. The homotopy analysis method (HAM) is introduced to solve the generalized Boussinesq equation. In this work, we establish the new analytical solution of the exponential function form. Applying the homotopy perturbation method to solve the variable coefficient Boussinesq equation. The results indicate that this method is efficient for the nonlinear models with variable coefficients.

1. Introduction

The nonlinear partial differential equation(NLPDE) have become a useful and exact tool to express natural phenomena of science and engineering models. Therefore, the studies of the solutions for NLPDE have great significance in searching the nonlinear natural phenomena. Considerable efforts have been made by many mathematicians and physical scientists to obtain powerful and efficient methods such as the Tanh-function method[1]; the Sine-Cosine method[2]; the Exp-function method[3]; the Adomian decomposition method[4]; the Jacobi elliptic function method[5]; the homotopy perturbation method[6]; the modified simple equation method[7]; the $(\frac{G'}{G})$ expansion method[8]; the F-expansion method[9]; the homotopy analysis method (HAM)[10] and so on. In the paper,through the homotopy analysis method and the homotopy perturbation method,solving the nonlinear Boussinesq equation

$$u_{tt} - \alpha(t)u_{xx} - r(t)u_{xxxx} - \beta(t)(u^2)_{xx} = 0$$

where $\alpha(t), r(t), \beta(t)$ are any function about t . The Boussinesq equation is a classical nonlinear equation, which describes the wave phenomenon of physics, and has been widely studied in many fields of physics. Solving the Boussinesq equation has become a hot topic in the study of nonlinear equations.

2. Basic idea of homotopy analysis method

In this section, we review the main contents of HAM briefly, we consider the nonlinear equation

$$N[u(x,t)] = 0, \tag{2.1}$$

where N is a nonlinear operator, x and t express independent variables, and $u(x,t)$ is an unknown function. According to the basic idea of the traditional homotopy method, we construct a