Judul Artikel : Effects of Gamma Radiation on Electrical Conductivyty of PVA-

CH Composites

Penulis : Susilawati, Aris Doyan

Nama Jurnal : Materials Science Forum

Volume Jurnal : 827

Halaman : 180-185

ISSN : 1662-9752

Penerbit : scientific.net

DOI : https://doi.org/10.4028/www.scientific.net/MSF.827.180

Alamat Web Jurnal : https://www.scientific.net/MSF.827.180

URL Dokumen : https://www.scientific.net/MSF.827.180.pdf

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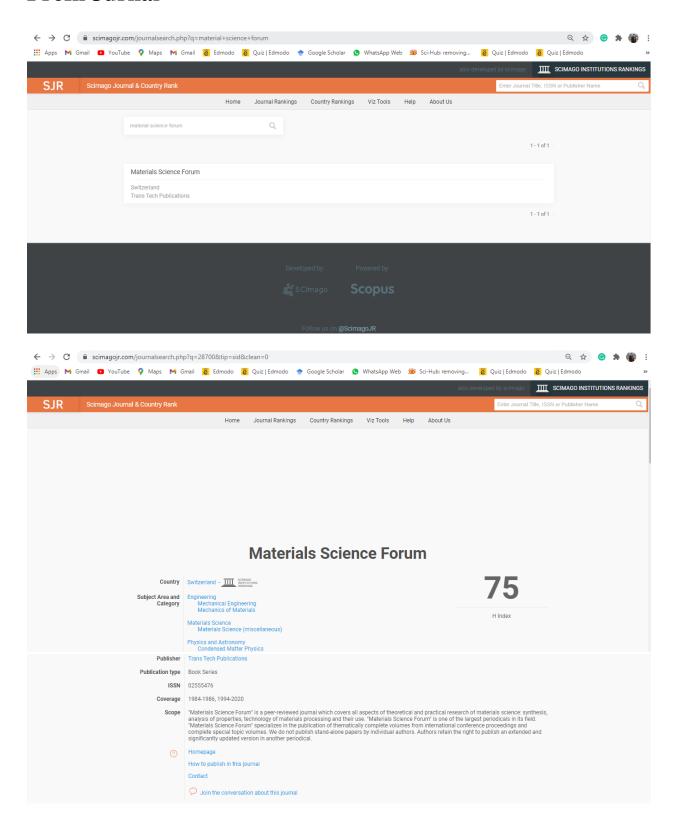
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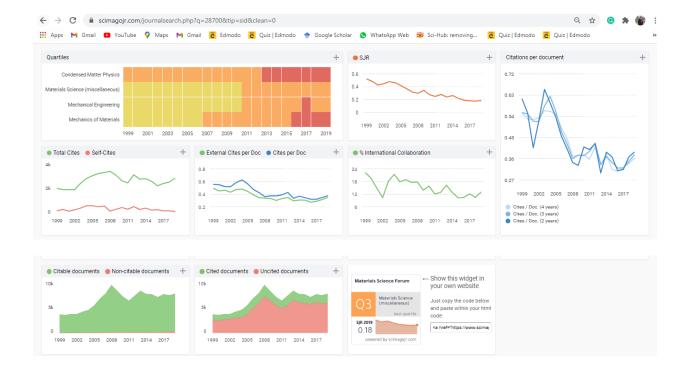
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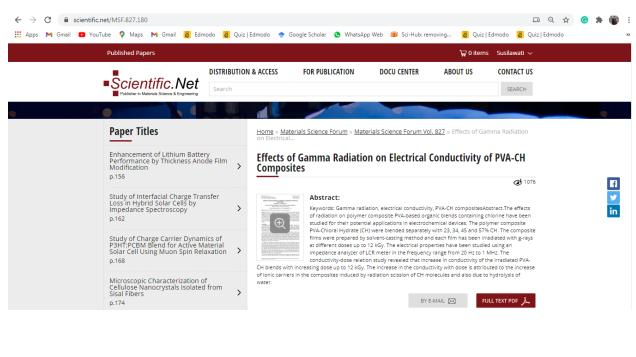
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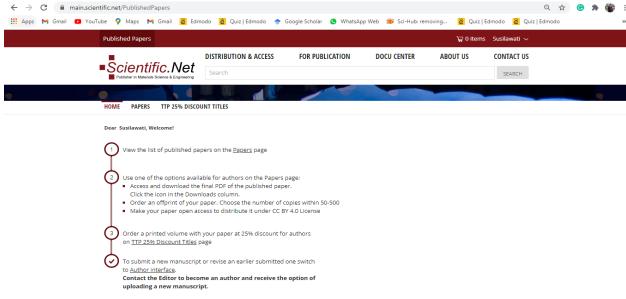
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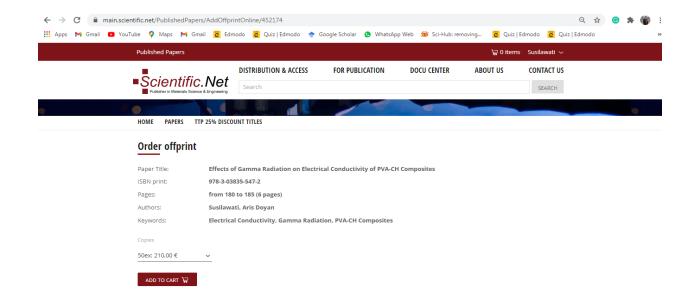




Artikel tulisan author yang terbit di Material Science Forum







Effects of Gamma Radiation on Electrical Conductivity of PVA-CH Composites

Submitted: 2014-10-25

Revised: 2015-04-29

Accepted: 2015-05-02

Susilawati^{1,a}, Aris Doyan^{1,b}

¹Department of Physics Education, Faculty of Teacher Training and Education, Mataram University, Lombok NTB Indonesia

^asusilawatihambali@yahoo.co.id, ^barisdoyan@yahoo.co.id

Keywords: Gamma radiation, electrical conductivity, PVA-CH composites

Abstract. The effects of radiation on polymer composite PVA-based organic blends containing chlorine have been studied for their potential applications in electrochemical devices. The polymer composite PVA-Chloral Hydrate (CH) were blended separately with 23, 34, 45 and 57% CH. The composite films were prepared by solvent-casting method and each film has been irradiated with γ -rays at different doses up to 12 kGy. The electrical properties have been studied using an impedance analyzer of LCR meter in the frequency range from 20 Hz to 1 MHz. The conductivity-dose relation study revealed that increase in conductivity of the irradiated PVA-CH blends with increasing dose up to 12 kGy. The increase in the conductivity with dose is attributed to the increase of ionic carriers in the composites induced by radiation scission of CH molecules and also due to hydrolysis of water.

Introduction

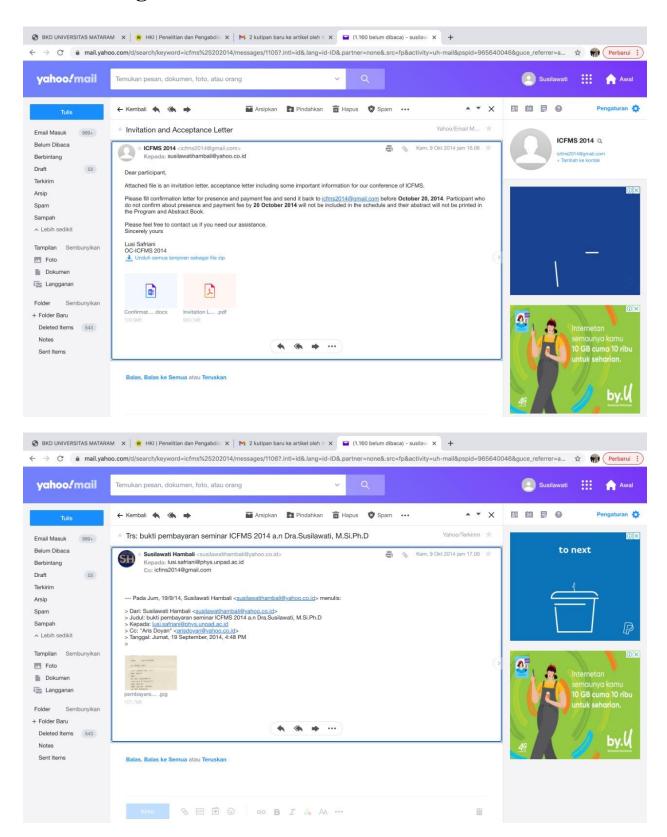
The physical, chemical and biological properties of materials may be modified by treatment with ionizing radiation in the form of gamma rays, energetic electrons and ion beams. This radiation processing technique has become very important in the present material processing technology because it is less expensive and is environmental friendly it offer many advantages when compared with traditional chemical processes. The mechanisms of radiation processing of materials include polymerization, cross-linking, grafting, curing and scission.

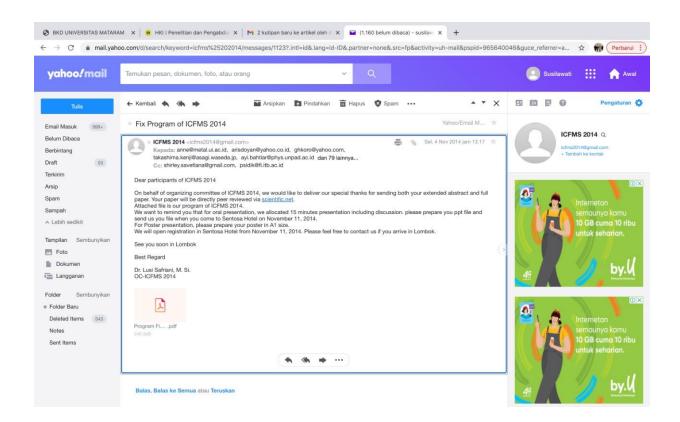
Gamma irradiation processing is widely known for cross-linking plastic materials. High energy electron beam cross-linking is used to produce heat-shrinkable plastic films for packaging foods and other consumer products, heat-shrinkable plastic tubing and encapsulations for industrial products, wire insulations, plastic foam and hydrogels for medical applications. Natural and synthetic polymers have been treated with ionizing radiation to modify their mechanical, structural, optical and electrical properties for various applications such as dosimetry and electrochemical, optical and electronic devices [1-3]. When polymers are exposed to high energy radiation such as gamma rays, there may be cross-linking or scission of the long polymer chains. Both processes may occur simultaneously, but usually one dominates [4].

In general, pure polymers are insulators having very low electrical conductivity at room temperature. Their structural, physical and chemical properties can be changed with addition of salts, blends and plasticizers to form solid composite polymers [5]. Electrochemical methods of energy storage and conversion are interest for many practical applications. There has been an ever increasing demand for portable batteries used in electronic devices. The focus has been on relatively low-cost and environmentally friendly electrode materials and electrolytes used in batteries and fuel cells. Therefore, much research has been devoted to work on electrodes and electrolytes for battery, super capacitor and fuel cell applications [6]. PVA is a water soluble polymer which is in widespread use in several interesting physical properties and very useful in technical applications in biochemical and medical. PVA is a potential material having a good charge storage capacity and dopant-dependent electrical and optical properties [7].

PVA has the different internal structure which may be considered as amorphous or semi crystalline. The semi crystalline structure of PVA shows an important feature rather than the

E-mail dengan ICFMS 2014





bukti pembayaran seminar ICFMS 2014 a.n Dra.Susilawati, M.Si.Ph.D

Dari: Susilawati Hambali (susilawatihambali@yahoo.co.id)

Kepada: lusi.safriani@phys.unpad.ac.id Cc: arisdoyan@yahoo.co.id

Tanggal: Jumat, 19 September 2014 16.48 WITA

pembayaran seminar susilawati.jpg 101.7kB

(Tidak Ada Judul)

Dari: Risdiana (risdiana@phys.unpad.ac.id)

Kepada: arisdoyan@yahoo.co.id; susilawatihambali@yahoo.co.id

Tanggal: Senin, 22 September 2014 10.34 WITA

Dear Pak Aris Doyan cc. Ibu Susilawati,

Terimakasih telah registrasi untuk mengikuti ICFMS 2014. Mohon untuk mengirim abstract sesuai template dalam file doc yang saya attachkan ke alamat email saya risdiana@phys.unpad.ac.id dan icfms2014@gmail.com

saya attachkan pula template untuk full papernya. terimakasih sebelumnya. salam Risdi

--

Dr. Risdiana, M. Eng.
Department of Physics
Faculty of Mathematics and Natural Science
Universitas Padjadjaran
Jl. Raya Bandung Sumedang km. 21
Jatinangor- Sumedang West Jawa 45363 Indonesia
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ICFMS 2014

Dari: ICFMS 2014 (9780000019806@scientific.net)

Kepada: susilawatihambali@yahoo.co.id Tanggal: Rabu, 1 Oktober 2014 19.53 WITA

Dear Dr. Susilawati Susilawati,

On behalf of the organizing committee of 2nd International Conference on Functional Materials Science 2014 (ICFMS 2014), we would like to deliver our special thanks for your participation in ICFMS 2014, to be held in Lombok, Indonesia on November 12-13, 2014.

Your login credentials for uploading your paper for the conference «ICFMS 2014» are :

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Password: xwBqKbHj

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When preparing your manuscript, please be sure to follow the template available under « Participant Home ». Please fill out the manuscript Checklist (fourth entry on the Participant bar). Also, while submitting the manuscript, be sure to also submit a completed Copyright Form.

Please note that manuscript submission closes on 26/10/2014.

Best regards, Risdiana

Invitation and Acceptance Letter

Dari: ICFMS 2014 (icfms2014@gmail.com)
Kepada: susilawatihambali@yahoo.co.id
Tanggal: Kamis, 9 Oktober 2014 16.06 WITA

Dear participant,

Attached file is an invitation letter, acceptance letter including some important information for our conference of ICFMS.

Please fill confirmation letter for presence and payment fee and send it back to icfms2014@gmail.com before **October 20, 2014**. Participant who do not confirm about presence and payment fee by **20 October 2014** will not be included in the schedule and their abstract will not be printed in the Program and Abstract Book.

Please feel free to contact us if you need our assistance. Sincerely yours

Lusi Safriani OC-ICFMS 2014



Confirmation Letter of ICFMS 2014.docx 100.9kB



Invitation Letter-Susilawati.pdf

930.1kB



2nd International Conference on Functional Materials Science 2014

The Development of Advanced Research on Materials Science in Indonesia

November 12-13, 2014, Lombok, Indonesia

http://situs.opi.lipi.go.id/icfms2014/

INVITATION LETTER

To Susilawati

On behalf of the organizing committee of 2nd International Conference on Functional Materials Science 2014 (ICFMS 2014), we would like to invite you to participate in ICFMS 2014, to be held in Lombok, Indonesia on November 12-13, 2014.

We are pleased to confirm that your paper entitled: **Synthesis and Characterization of Solid Composite Polymer**, has been accepted to be presented in ICFMS 2014.

Please refer to **Conference Program** and **Presentation Guideline** for preparing your presentation.

All presented and accepted manuscripts from the ICFMS 2014 will be published in <u>Material Science Forum</u>, which is indexed by Elsevier: SCOPUS, Ei Compendex (CPX), Cambridge Scientific Abstracts (CSA), Chemical Abstracts (CA), Google and Google Scholar, ISI (ISTP, CPCI, Web of Science), Institution of Electrical Engineers (IEE). Your login credentials for uploading your manuscript will be sent to your e-mail.

We are looking forward to seeing you in Lombok

Best Regard,

Dr. Risdiana, M. Eng.

Chairman of Organizing Committee

Fix Program of ICFMS 2014

Dari: ICFMS 2014 (icfms2014@gmail.com)

Kepada: anne@metal.ui.ac.id; arisdoyan@yahoo.co.id; ghkoro@yahoo.com; takashima.kenji@asagi.waseda.jp; ayi.bahtiar@phys.unpad.ac.id; alfred.albert@ui.ac.id; shofianina.dwi@gmail.com; yopen_2005@yahoo.com; m0210056@gmail.com; iisphysics@gmail.com; eni.sugiarti@lipi.go.id; fahmistt09@gmail.com; asep.ridwans@material.itb.ac.id; ariskaditya@yahoo.com; annisanoorhidayati@gmail.com; ahmad.taufiq11@mhs.physics.its.ac.id; agus_fadhil@yahoo.com; ananda.nugraheni@yahoo.com; decky@ui.ac.id; deckyji@gmail.com; isfatimah@uii.ac.id; isfatimah@gmail.com; ekusrini@che.ui.ac.id; afr13 pjj007@student.usm.my; c.mulyana55@yahoo.com; melchorjpotestas@gmail.com; ruroh@ub.ac.id; halim.daulay@gmail.com; mchalid@gmail.com; evana.yuanita@gmail.com; erman_taer@yahoo.com; harsojougm@ugm.ac.id; ruspiter5@mail.ru; nadia.f.djaja@gmail.com; herisutanto@gmail.com; bpidhatika@gmail.com; haryonolipi@yahoo.com; aguspur@uns.ac.id; agussukarto@gmail.com; aniek.handayani@ymail.com; annisa.noorhidayati@gmail.com; ardiansyah.taufik@ui.ac.id; efendi aula@st.fisika.undip.ac.id; aventi kusuma@yahoo.co.id; dsantjojo@gmail.com; dahyunir@yahoo.com; prihandoko1@yahoo.com; indribadria@yahoo.com; susilawatihambali@yahoo.co.id; iwan_tono@yahoo.co.uk; ekop2003@yahoo.com; fandi09@mhs.physics.its.ac.id; fitrilawati@phys.unpad.ac.id; yuli@eng.ui.ac.id; ghiska_faresya@yahoo.co.id; hanifsnusa@gmail.com; hsosiati@ugm.ac.id; aanugroho2011@gmail.com; lusi.safriani@phys.unpad.ac.id; julend03@yahoo.com; mastuki.55@gmail.com; chafiefah@gmail.com; prantasi@gmail.com; saidchemist20@gmail.com; risdiana@phys.unpad.ac.id; gumilargilang@gmail.com; sahrul.hidayat@phys.unpad.ac.id; t.saragi@phys.unpad.ac.id; toto.sudiro@lipi.go.id; sarah,arifiyanti@amail.com; wien@upi.edu: lydia,anagra@amail.com; m asyain@yahoo.com; witta.kartika@yahoo.com; wiwikpudjiastuti@yahoo.com; mtoifur@yahoo.com; riesca.wardhani@gmail.com; ferli_q3a@yahoo.co.id; rosari.saleh90@gmail.com; triyana@ugm.ac.id; n.sjakir@phys.unpad.ac.id; t.susilawati@phys.unpad.ac.id; c.panatarani@phys.unpad.ac.id; jokotri@yahoo.com

Cc: shirley.savetlana@gmail.com; psidik@fi.itb.ac.id

Tanggal: Selasa, 4 November 2014 13.17 WITA

Dear participants of ICFMS 2014

On behalf of organizing committee of ICFMS 2014, we would like to deliver our special thanks for sending both your extended abstract and full paper. Your paper will be directly peer reviewed via <u>scientific.net</u>. Attached file is our program of ICFMS 2014.

We want to remind you that for oral presentation, we allocated 15 minutes presentation including discussion. please prepare you ppt file and send us you file when you come to Sentosa Hotel on November 11, 2014. For Poster presentation, please prepare your poster in A1 size.

We will open registration in Sentosa Hotel from November 11, 2014. Please feel free to contact us if you arrive in Lombok.

See you soon in Lombok

Best Regard

Dr. Lusi Safriani, M. Si. OC-ICFMS 2014



Program Fix-ICFMS-2014-12-13 November.pdf 546.8kB

Re: Result of ICFMS Paper review

Dari: Khairurrijal (krijal@fi.itb.ac.id)

Kepada: icfms2014@gmail.com

hanifsnusa@gmail.com; aventi_kusuma@yahoo.co.id; sahrul.hidayat@phys.unpad.ac.id; herisutanto@gmail.com; ariskaditya@yahoo.com; fahmistt09@gmail.com; dahyunir@yahoo.com; miftah@fi.itb.ac.id; krijal@fi.itb.ac.id; aguspur@uns.ac.id; toto.sudiro@lipi.go.id; decky@ui.ac.id; hsosiati@ugm.ac.id; ahmad.taufiq11@mhs.physics.its.ac.id; melchorjpotestas@gmail.com;

chafiefah@gmail.com; annisa.noorhidayati@gmail.com; isfatimah@uii.ac.id; asep.ridwans@material.itb.ac.id;

ardiansyah.taufik@ui.ac.id; sarah.arifiyanti@gmail.com; fitrilawati@phys.unpad.ac.id;

c.mulyana55@yahoo.com; mchalid@gmail.com; ayi.bahtiar@phys.unpad.ac.id; rahmat@fi.itb.ac.id;

fandi09@mhs.physics.its.ac.id; jokotri@yahoo.com; ananda.nugraheni@yahoo.com;

susilawatihambali@yahoo.co.id; ekop2003@yahoo.com; efendi_aula@st.fisika.undip.ac.id;

alfred.albert@ui.ac.id; agussukarto@gmail.com; prantasi@gmail.com; sunaryono11@mhs.physics.its.ac.id;

halim.daulay@gmail.com; yopen_2005@yahoo.com; annisanoorhidayati@gmail.com; nadia.f.djaja@gmail.com; t.susilawati@phys.unpad.ac.id; c.panatarani@phys.unpad.ac.id;

arisdoyan@yahoo.co.id; witta.kartika@yahoo.com; teguhpujanegara@ipb.ac.id; wien@upi.edu;

m_asyain@yahoo.com; ruroh@ub.ac.id; aguspurw@gmail.com; mastuki.55@gmail.com;

har sojougm@ugm.ac.id; lusi.safriani@phys.unpad.ac.id; dsantjojo@gmail.com; iisphysics@gmail.com; iisphysics

yuli@eng.ui.ac.id; shofianina.dwi@gmail.com; bpidhatika@gmail.com; rajakphysics89@gmail.com;

wiwikpudjiastuti@yahoo.com; sri.fahmiati@gmail.com; aniek.handayani@ymail.com;

t.saragi@phys.unpad.ac.id; shirley.savetlana@gmail.com; nabedon@riken.jp; afr13_pjj007@student.usm.my;

shukri@usm.my; ghkoro@yahoo.com

Tanggal: Senin, 9 Maret 2015 18.00 WITA

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> Thank you for your cooperation.

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Dari: ICFMS 2014 (9780000019806@scientific.net)

Kepada: susilawatihambali@yahoo.co.id Tanggal: Rabu, 18 Maret 2015 13.13 WITA

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Kepada: susilawatihambali@yahoo.co.id Tanggal: Senin, 23 Maret 2015 11.09 WITA

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Thank you. Best regards, Editors

"ICFMS 2014" Manuscript "EFFECTS OF GAMMA RADIATION ON ELECTRICAL CONDUCTIVITY OF PVA-CH COMPOSITES"

Dari: ICFMS 2014 (9780000019806@scientific.net)

Kepada: susilawatihambali@yahoo.co.id Tanggal: Senin, 27 April 2015 14.34 WITA

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Thank you.
Best regards,
Agustinus Agung Nugroho
nugroho@fi.itb.ac.id

Your paper has been accepted for publication in MATERIALS SCIENCE FORUM

ICFMS 2014 (9780000019806@scientific.net)

Kepada: susilawatihambali@yahoo.co.id Tanggal: Sabtu, 2 Mei 2015 23.16 WITA

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Best regards, **EDITORS**

Offprints via scientific.net for Functional Properties of Modern Materials

Dari: Trans Tech Publications (authors@ttp.net)

 ${\it Kepada: susilawatihambali@yahoo.co.id}$

Tanggal: Senin, 7 September 2015 21.24 WITA

Materials Science & Engineering

Online periodicals

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Go to 'Author'(upper left corner), then go to 'Papers' and click on the Offprint icon next to the paper you want to order offprints.

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Dari: Trans Tech Publications (authors@ttp.net)

Kepada: susilawatihambali@yahoo.co.id

Tanggal: Rabu, 18 November 2015 16.56 WITA

Materials Science & Engineering

Online periodicals

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