JST JOURNAL OF SCIENCE AND TECHNOLOGY TECHNICAL UNIVERSITIES

ISSN 2734-9381

JST: ENGINEERING AND TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT

April 2024 Volume 34 Issue 2

Since 1991 No. 173

GENERAL GUIDELINES

- 1. The Journal of Science and Technology publishes research results with novel scientific and practical values in scientific research, technological transfer and production practice. The work described must not have been published in or submitted to other scientific journals.
- 2. Manuscript to be submitted must be prepared according to the journal's template.
- 3. All manuscripts will be double blind reviewed. Authors need to ensure that their manuscripts are prepared in a way that does not give away their identity.
- 4. The contribution and affiliation of each author in a paper should be clarified. One author should be assigned as the corresponding author.
- 5. Publications of results from research projects must have permission from the funding agencies and should include conforming acknowledgment.
- 6. Authors are requested to submit their manuscript and follow the review progress electronically by using the online submission system on the journal's web site.
- 7. The detail guidelines for authors and reviewers can be consulted on the journal's website.

JST JOURNAL OF SCIENCE AND TECHNOLOGY TECHNICAL UNIVERSITIES

Journal of Science and Technology Engineering and Technology for Sustainable Development

Volume 34, Issue 2, April 2024

Deputy Editor-in-Chief

Prof. Dr. Dinh Van Phong Hanoi University of Science and Technology Vietnam

Advisory Board

Prof. Dr. Sci. Banh Tien Long - VASE, Vietnam Prof. Dr. Sci. Dang Vu Minh - VUSTA, Vietnam Prof. Dr. Sci. Ho Tu Bao - JAIST, Vietnam Prof. Dr. Sci. Bui Van Ga - UDN, Vietnam Assoc. Prof. Dr. Dang Hoai Bac - PTIT, Vietnam Assoc. Prof. Dr. Mai Thanh Phong - HCMUT, Vietnam Prof. Dr. Nguyen Duc Chien - HUST, Vietnam Assoc. Prof. Dr. Huynh Quyet Thang - HUST, Vietnam

Editorial Board

Assoc. Prof. Dr. Lai Ngoc Anh, HUST, Vietnam Assoc. Prof. Dr. To Kim Anh, HUST, Vietnam Assoc. Prof. Dr. Do Van Dung, HCMUTE, Vietnam Assoc. Prof. Dr. Le Hieu Giang, HCMUTE, Vietnam Prof. Dr. Huynh Trung Hai, HUST, Vietnam Assoc. Prof. Dr. Vu Duy Hai, HUST, Vietnam Assoc. Prof. Dr. Bui Anh Hoa, HUST, Vietnam Prof. Dr. Nguyen Duc Hoa, HUST, Vietnam Prof. Dr. Nguyen The Hung, UDN, Vietnam Prof. Dr. Le Kim Hung, UDN, Vietnam Dr. Nguyen Thanh Hung, HUST, Vietnam Prof. Dr. Kozo Ishizaki, NUT, Japan Assoc. Prof. Dr. Preechar Karin, KMITL, Thailand Prof. Dr. Hyungsun Kim, Inha University, Korea Prof. Dr. Jae-chun Lee, KIGAM, Korea Prof. Dr. Tran Van Nam, UDN, Vietnam Prof. Dr. Nguyen Thanh Nam, HCMUT, Vietnam Assoc. Prof. Dr. Truong Quoc Phong, HUST, Vietnam Assoc. Prof. Dr. Le Thi Kim Phung, HCMUT, Vietnam Assoc. Prof. Dr. Le Minh Phuong, HCMUT, Vietnam Assoc. Prof. Dr. Hoang An Quoc, HCMUTE, Vietnam Assoc. Prof. Dr. Iman K. Reksowardojo, ITB, Indonesia Prof. Dr. Olivier Sename, Grenoble INP, France Prof. Dr. Le Minh Thang, HUST, Vietnam Assoc. Prof. Dr. Nguyen Xuan Thao, HUST, Vietnam Assoc. Prof. Dr. Hoang Trang, HCMUT, Vietnam Prof. Dr. Vu Van Yem, HUST, Vietnam

Supported by Hanoi University of Science and Technology Ho Chi Minh City University of Technology Ho Chi Minh City University of Technology and Education Posts and Telecommunications Institute of Technology University of Danang

CONTENTS

1.	Study on Structure and Reducibility of Iron Ore Sinter Containing Basic Oxygen Furnace Slag	1
	Cao Son Nguyen [*] , Trung Duc Tran, Anh Hoa Bui Hanoi University of Science and Technology, Ha Noi, Vietnam	
2.	Nanomaterial SnS ₂ -Based Sensor for VOC Gas Detection at Room Temperature	9
	To Thi Nguyet ¹ , Dang Thanh Binh ³ , Chu Manh Hung ^{1,2} , Jian Zhen Ou ⁴ , Nguyen Duc Hoa ^{1,2*} ¹ International Training Institute for Materials Science (ITIMS), Hanoi University of Science and Technology, Ha Noi, Vietnam; ² School of Materials Science and Engineering, Hanoi University of Science and Technology, Ha Noi, Vietnam; ³ Center for High Technology Research and Development, Vietnam Academy of Science and Technology, Ha Noi, Vietnam ⁴ School of Engineering, RMIT University, Melbourne, Victoria, Australia	
3.	Synthesis of Cobalt Ferrite Nanocomposite Coated with Aluminum Oxide and Application in Protein Removal Process in Natural Rubber	17
	Vu Thi Thuy ^{1,2} , Le Thi Thu Trang ² , Dao Ngoc Thi ¹ , Nguyen Nhat Trang ¹ , Le Thi Hong Nhung ¹ , Nguyen Thai Huy ¹ , Phan Trung Nghia ^{1*} ¹ School of Chemistry and Life Sciences, Hanoi University of Science and Technology, Ha Noi, Vietnam ² Rubber Science and Technology Center, Hanoi University of Science and Technology, Ha Noi, Vietnam	
4.	Non-enzymatic Glucose Sensor Based on Ni(OH) ₂ /NF Materials Using Different Pulse Voltammetry Technique	24
	Do Trinh Xuan Minh ¹ , Dinh Hieu Trung ^{1,2} , Tran Vu Diem Ngoc ³ , Chu Van Tuan ⁴ , Nguyen Hai Ha ⁴ , Tran Tri Quang ⁴ , Chu Thi Xuan ^{2,3*} , Dang Thi Thanh Le ^{2,3} , Luc Nhu Quynh ⁵ , Nguyen Duc Hoa ^{2,3} ¹ School of Engineering Physics, Hanoi University of Science and Technology, Ha Noi, Vietnam. ² International Training Institute for Materials Science (ITIMS), Hanoi University of Science and Technology, Ha Noi, Vietnam. ³ School of Materials Science and Engineering, Hanoi University of Science and Technology, Ha Noi, Vietnam ⁴ Hung Yen University of Technology and Education, Hung Yen, Vietnam ⁵ Academy of Cryptography Techniques, Ha Noi, Vietnam	
5.	An IoT-Based Smart Electronic Nose System for Non-Destructive Meat Freshness Monitoring	31

Thanh Huong Nguyen^{*}, Minh Hoang Le School of Electrical and Electronic Engineering, Hanoi University of Science and Technology, Ha Noi, Vietnam

6. Rice Leaf Diseases Detection Using YOLOv8 *Trinh Cong Dong, Mac Tuan Anh, Giap Van Khanh, Nguyen Thanh Huong, Bui Dang Thanh*^{*} *Hanoi University of Science and Technology, Ha Noi, Vietnam* 40

 Research and Manufacture of Hydraulic Butt Fusion Welding Machine for Different Plastic
48 Material Pipes

> Nguyen Tien Duong^{*} Hanoi University of Science and Technology, Ha Noi, Vietnam

 Numerical Study of Unsteady Flow Separation on Small Scale Wings Using Vortex Identification 58 Methods

> Viet Anh Duong¹, Viet Dung Duong^{2*} ¹University of Science and Technology of Hanoi, Vietnam Academy of Science and Technology, Ha Noi, Vietnam ²School of Aerospace Engineering, VNU University of Engineering and Technology, Ha Noi, Viet Nam

Publishing license No. 37/GP-BTTTT (15/01/2021) and 140/GP-BTTTT (05/3/2021) Printed by Bach Khoa Publishing House, 17 Ta Quang Buu, Hanoi, Vietnam