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DE GRUYTER

User Guide

(주)제이알엠

02-2038-8519

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<KERIS 대학 라이선스 De Gruyter e-Journal HSS Collection 소개>

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: 매 년 1,300여 종 이상의 신간 타이틀, 360여 종의 저널, 550여 종의 Open Access 저널과 50여 개의 데이터베이스를 포함하여 다양한 디지털 프로덕트를 출판

▶ HSS Journal Collection 소개

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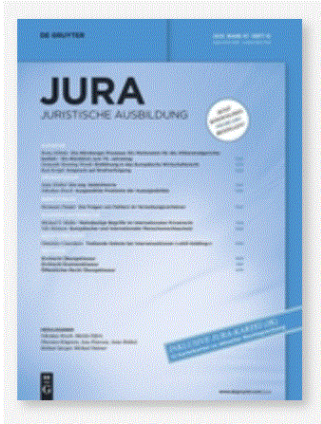
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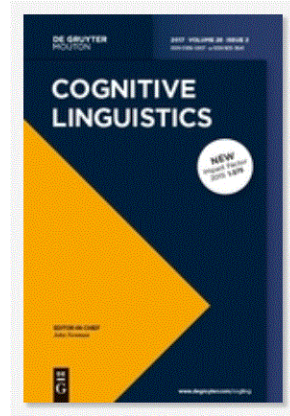
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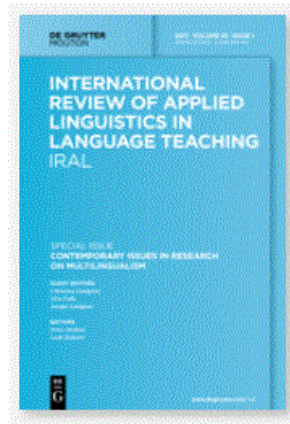
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1. De Gruyter Main Homepage

The screenshot shows the De Gruyter main homepage. The top navigation bar includes the De Gruyter logo, a search bar with a magnifying glass icon, and links for 'Log out', 'Help', and 'Deutsch'. Below the search bar, there are two search options: '간단검색' (Simple Search) and '고급검색' (Advanced Search). The main content area features a large banner with the text 'OUT OUR NEW ONLINE REFERENCE WORKS. FREE TRIALS AVAILABLE!' and 'TECHNOLOGY, CHEMISTRY AND LIFE SCIENCES @ DE GRUYTER'. On the left side, there are two dropdown menus: '주제별' (Subjects) and '자료유형' (Product Types). The '주제별' menu lists various subjects such as Architecture and Design, Arts, Asian and Pacific Studies, Business and Economics, Chemistry, Classical and Ancient Near Eastern Studies, Computer Sciences, Cultural Studies, Engineering, General Interest, Geosciences, History, Industrial Chemistry, Islamic and Middle Eastern Studies, Jewish Studies, Law, Library and Information Science, Book Studies, Life Sciences, Linguistics and Semiotics, Literary Studies, Materials Sciences, and Mathematics. The '자료유형' menu lists product types such as Books, Textbooks, Journals/Yearbooks, Databases, Multi-Volume Works, Book Series, New Publications, and Upcoming Publications. On the right side, there is a 'MY CART' icon and a 'Feedback' button. The URL 'https://www.degruyter.com/browse' is visible at the bottom left.

주제별

자료유형

간단검색

고급검색

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- Architecture and Design
- Arts
- Asian and Pacific Studies
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- Chemistry
- Classical and Ancient Near Eastern Studies
- Computer Sciences
- Cultural Studies
- Engineering
- General Interest
- Geosciences
- History
- Industrial Chemistry
- Islamic and Middle Eastern Studies
- Jewish Studies
- Law
- Library and Information Science, Book Studies
- Life Sciences
- Linguistics and Semiotics
- Literary Studies
- Materials Sciences
- Mathematics

PRODUCT TYPES ▾

- Books
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2. Search : 간단검색

The screenshot shows the De Gruyter search results page. At the top left is the De Gruyter logo. The top right has navigation links: Log in, Register, Help, and Deutsch. A search bar contains the text 'Search De Gruyter Online' with a magnifying glass icon. Below the search bar is a 'MY CART' icon. The main header includes 'SUBJECTS' and 'PRODUCT TYPES' dropdown menus. The search results are titled 'Search Results - De Gruyter Publishers'. A blue callout box '저널 타이틀 입력' points to the search bar. Another blue callout box '검색 결과' points to the search results title. A third blue callout box '주제 별로 선택 가능' points to the subject filter list. A fourth blue callout box '원문 접속 권한' points to the 'LICENSED ACCESS' button for the first search result. The search results list includes 'International Journal of Food Engineering' and 'Product and Process Design (2018)'. The first result has a 'SAVE' button and a 'LICENSED ACCESS' button. The second result has a 'SAVE' button. The page number is 'Page: 1 2 3 4 5 6 7'.

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Search Results - De Gruyter Publishers

주제 별로 선택 가능

저널 타이틀 입력

검색 결과

Page: 1 2 3 4 5 6 7

International Journal of Food Engineering

Product Type: Journals/Yearbooks
Format: Online

SAVE LICENSED ACCESS

원문 접속 권한

Product and Process Design (2018)

ISBN: 978-3-11-046774-1
Product Type: Textbooks
Format: eBook (PDF)
Also available as eBook (EPUB), Paperback

SAVE

Feedback

2. Search : 간단검색

REFINE BY DATE

- 1980-1989 (1)
- 2000-2009 (3)
- 2010-2019 (59)
- 2020-2029 (1)

날짜별로 선택 가능

PRODUCT TYPE

- Journals/Yearbooks (34)
- Book Series (0)
- Multi-Volumed Works (0)
- Books (16)
- Databases (0)
- Textbooks (11)

UPDATE

출판물 타입별로 선택 가능

COMING SOON / NEW RELEASES

- Future Publications (11)
- Upcoming Publications (1)
- New Publications (3)

앞으로 출시될 출판물

ACCESSIBLE CONTENT

- Free Access
- Open Access
- All-accessible-content

UPDATE

검색 결과에서 원문 접속의 범위를 설정

PUBLISHER

- De Gruyter (103)
- Sciendo (12)
- Böhlau (2)
- Birkhäuser (12)
- De Gruyter Oldenbourg (31)
- De Gruyter Akademie Forschung (6)
- transcript Verlag (5)

출판사별로 선택 가능

Product Type: Textbooks

Formulation Science and Technology

Tadros, Tharwat F.
Volume 4 Agrochemicals, Paints and Coatings and Food Colloids (2018)

Also available as eBook (EPUB), Hardcover

SAVE

Technology, Vol 1-4] (2018)

ISBN: 978-3-11-061201-1
Product Type: Books
Format: Hardcover

Integrated Bioprocess Engineering (2018)

ISBN: 978-3-11-031539-4
Product Type: Textbooks
Format: eBook (PDF)

Chemistry of Nanomaterials

Volume 1 Metallic Nanomaterials (to be published October 2018)

3. Advanced Search : 고급검색

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Advanced Search >

MY CART

저자 명, 글 전체, ISBN/ISSN, Keywords, 언어, 주제, 제목으로 상세 검색이 가능

Advanced search

Search by entering a word or phrase in the search box. Add new row(s) to include additional words or phrases and refine your search further.

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ISBN/ISSN
Keywords
Language
Subject
Title

Author
Author
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Keywords
Language
Subject
Title

Journals/Yearbooks Databases Multi-Volumed Works Book Series Textbooks

출판물의 종류

De Gruyter Harvard University Press Sciendo Böhlau Birkhäuser De Gruyter Oldenbourg De Gruyter Akademie transcript Verlag University of Toronto Press
Forschung Cornell University Press

Constrain results to publications only. Do not search documents - articles, chapters and entries

출판물만 검색하도록 제한

De Gruyter 하위 카테고리

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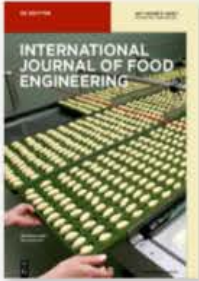
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CLEAR SEARCH

Feedback

LIBRARIES TRADE AUTHORS SOCIETIES NEWSROOM LEHRBÜCHER OPEN ACCESS

4. View : 열람하기



International Journal of Food Engineering

Editor-in-Chief: Chen, Xiao Dong
12 Issues per year
IMPACT FACTOR 2017: 0.923
CiteScore 2017: 0.98
SCImago Journal Rank (SJR) 2017: 0.323
Source Normalized Impact per Paper (SNIP) 2017: 0.505

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Volume Issue Page

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- Fast access to contributions due to the ahead of print publishing
- Interdisciplinary approach to the subject matter
- Groundbreaking research methods and strategies

Aims and Scope

Objective

International Journal of Food Engineering is devoted to engineering disciplines related to processing foods. The areas of interest include heat, mass transfer and fluid flow in food processing; food microstructure development and characterization; application of artificial intelligence in food engineering research and in industry; food biotechnology; and mathematical modeling and software development for food processing purposes. Authors and editors come from top engineering programs around the world: the U.S., Canada, the U.K., and Western Europe, but also South America, Asia, Africa, and the Middle East.

Feedback

4. View : 열람하기

The screenshot shows a journal's 'View' page. At the top, there are metrics: CiteScore 2017: 0.98, SCImago Journal Rank (SJR) 2017: 0.323, and Source Normalized Impact per Paper (SNIP) 2017: 0.505. A 'LICENSED ACCESS' checkbox is checked. On the right, there are options for 'Online' (ISSN 1556-3758), 'See all formats and pricing', 'Print Flyer', 'Recommend to Librarian', 'Get eTOC Alert', and 'Get New Article Alert'. The main content area is divided into a left sidebar and a main list. The sidebar has 'Current Issue' highlighted with a red box and a blue callout bubble. The main list shows 'Volume 14 (2018)' and 'Volume 13 (2017)' with their respective issues. A red box highlights the 'Select Volume and Issue' link, with a blue callout bubble. At the bottom left, a search bar with 'Volume', 'Issue', and 'Page' filters and a 'GO' button is highlighted with a red box and a blue callout bubble. A vertical 'Feedback' button is on the far right.

CiteScore 2017: 0.98
SCImago Journal Rank (SJR) 2017: 0.323
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Volume, Issue, Page로 검색이 가능

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Immobilized enzymolysis of corn gluten meal under triple-frequency ultrasound

Qu, Wenjuan / Sehemu, Raya Masoud / Zhang, Tian / Song, Bingjie / Yang, Lan / Ren, Xiaofeng / Ma, Haile

Article number 20170347
Published Online: 06/02/2018

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Hedayati, Sara / Majzoobi, Mahsa / Farahnaky, Asgar

Article number 20170293
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López-Pérez, Pablo A. / Cuervo-Parra, Jaime A. / Robles-Olvera, Victor José / Del C Rodriguez Jimenes, Guadalupe / Pérez España, Victor H. / Romero-Cortes, Teresa

Article number 20170206
Published Online: 05/25/2018

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Wu, Bengang / Pan, Zhongli / Xu, Baoguo / Bai, Junwen / El-Mashad, Hamed M. / Wang, Bel / Zhou, Cunshan / Ma, Haile

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11. Kaempferol Extraction from *Cuscuta reflexa* using Supercritical Carbon Dioxide and Separation of Kaempferol from the Extracts by Mitra, Pranabendu/ Chang, Kyu-Seob and Yoo, Dae-Seok
12. Microencapsulation of Colors by Spray Drying - A Review by Kandansamy, Kannan and Somasundaram, Priyenka Devi
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14. An Improved and Efficient Method for the Extraction of Phycocyanin from *Spirulina* sp by Doke, Jayant Mahadev
15. Heat Transfer Studies in Coiled Agitated Vessel with Varying Heat Input by Perarasu, V.T./ Arivazhagan, M and Sivashanmugam, P
16. Frontmatter
17. Masthead
18. Mass Transfer Coefficients and Correlation of Supercritical Carbon Dioxide Extraction of Sarawak Black Pepper by May Lin, Ting/ Siew Ping, Then/ Saptoro, Agus and Freddie, Panau
19. Evaluation and Optimization of Steam and Lye Peeling Processes of Sweet Potato (*Ipomea batatas*) using Response Surface Methodology (RSM) by Oladejo, Ayobami O./ Sobukola, Olajide P./ Awonori, Samuel O. and Adejuyigbe, Samuel B.
20. Standardization of Curing and Microwave Drying of Turmeric (*Curcuma longa*) Rhizomes by Gagare, Santosh/ Mudgal, V.D./ Champawat, P.S. and Pisal, Amit

Drying Performance and Product Quality of Sliced Carrots by Infrared Blanching Followed by Different Drying Methods
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Immobilized enzymolysis of corn gluten meal under triple-frequency ultrasound

Wenjuan Qu | Raya Masoud Sehemu | Tian Zhang | Bingjie Song | Lan Yang | Xiaofeng Ren | Haile Ma

18-06-02 | DOI: <http://ps3.doi.org.libproxy.snu.ac.kr/10.1515/ijfe-2017-0347>

초록

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Abstract

The single frequency ultrasound mode is difficult to achieve a higher enzymolysis efficiency. The cost of protein enzymatic hydrolysis, using free enzyme is higher because the enzyme cannot be used repeatedly. Therefore, the effects of triple-frequency ultrasound (TFU) treatment on the performance, kinetics, and thermodynamics of immobilized Alcalase enzymolysis of corn gluten meal (CGM) were investigated in this research. The results showed that degree of hydrolysis (DH), peptide concentration, ACE inhibitory activity, and relative enzyme activity were increased by 20.6 %, 34.4 %, 24.1 %, and 25.8 %, respectively, by TFU treatment at the optimum conditions compared to the control. Kinetics and thermodynamic analyses revealed that TFU treatment successfully decreased the apparent constant (K_M) by 27.0 % and increased the reaction rate constants (k) by 32.1–200 % at 303.15–343.15 K. The energy of activation (E_a), enthalpy of activation (ΔH), and entropy of activation (ΔS) were reduced by 17.1 %, 15.2–15.3 %, and 24.1–31.8 %, respectively. Immobilized enzymolysis assisted by TFU was proved to be an efficient method to increase the enzymolysis efficiency, enzyme activity, and antihypertensive activity of the peptides through performance and mechanism discussion.

Keywords: corn gluten meal; enzymatic hydrolysis; ultrasound; immobilized enzyme; kinetics

1 Introduction

Corn gluten meal (CGM), a by-product in maize starch plant, can be potentially used to prepare functional peptides through enzymatic hydrolysis method because it has a high protein content (67–71 %) and well-balance of essential amino acids [1]. Ma, et al. [2] proved that the Pentapeptide Q-L-L-P-F by enzymatic hydrolysis of CGM protein had a potent ability in facilitating alcohol metabolism. Yang, et al. [3] reported that ACE inhibitory peptides released by CGM enzymolysis had a good antihypertensive activity.

In recent years, using ultrasound technology to improve the enzymolysis efficiency of proteins to prepare bioactive peptides has received much attention [4, 5]. Zhou, et al. [6] proved that for the enzymatic hydrolysis of CGM with a single-frequency ultrasound (SFU) pretreatment, the apparent break-down rate constant (k_A) was increased by 10.98 % compared with the control without ultrasound pretreatment. The mostly used ultrasound frequency at present studies in protein ultrasound pretreatment is basically a single-frequency mode, which is difficult to achieve higher enzymolysis efficiency [6, 7, 8, 9]. Li, et al. [10] used a single-frequency ultrasound to pretreat rice protein first and then enzymatic hydrolysis was performed by free protease. Compared with the enzymolysis without ultrasound (18.05 %), the DH was only increased by 14 % at time of 100 min under single-frequency ultrasound pretreatment. However, the advanced working mode of simultaneous triple-frequency ultrasound (TFU) is rarely used in enzymatic hydrolysis of proteins. TFU represents the simultaneous action of ultrasounds with different frequencies. Multiple ultrasonic waves are focused on a point in the treatment solution, resulting in a broader ultrasonic wave spectrum through the superposition effect of the wave. It is more suitable for the treatment of multi-target complex system and is

Feedback

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ijfe-2017-0347.pdf 1 / 18

DE GRUYTER International Journal of Food Engineering. 2018; 20170347

Wenjuan Qu¹ / Raya Masoud Sehemu¹ / Tian Zhang¹ / Bingjie Song¹ / Lan Yang¹ / Xiaofeng Ren¹ / Haile Ma¹

Immobilized enzymolysis of corn gluten meal under triple-frequency ultrasound

¹ School of Food and Biological Engineering, Jiangsu University, 301Xuefu Road Zhenjiang, Jiangsu, China, E-mail: wqu@ujs.edu.cn

Abstract:
The single frequency ultrasound mode is difficult to achieve an higher enzymolysis efficiency. The cost of protein enzymatic hydrolysis, using free enzyme is higher because the enzyme cannot be used repeatedly. Therefore, the effects of triple-frequency ultrasound (TFU) treatment on the performance, kinetics, and thermodynamics of immobilized Alcalase enzymolysis of corn gluten meal (CGM) were investigated in this research. The results showed that degree of hydrolysis (DH), peptide concentration, ACE inhibitory activity, and relative enzyme activity were increased by 20.6 %, 34.4 %, 24.1 %, and 25.8 %, respectively, by TFU treatment at the optimum conditions compared to the control. Kinetics and thermodynamic analyses revealed that TFU treatment successfully decreased the apparent constant (K_M) by 27.0 % and increased the reaction rate constants (k) by 32.1–200 % at 303.15–343.15 K. The energy of activation (E_a), enthalpy of activation (ΔH), and entropy of activation (ΔS) were reduced by 17.1 %, 15.2–15.3 %, and 24.1–31.8 %, respectively. Immobilized enzymolysis assisted by TFU was proved to be an efficient method to increase the enzymolysis efficiency, enzyme activity, and antihypertensive activity of the peptides through performance and mechanism discussion.

Keywords: corn gluten meal, enzymatic hydrolysis, ultrasound, immobilized enzyme, kinetics
DOI: 10.1515/ijfe-2017-0347
Received: October 23, 2017; **Revised:** May 11, 2018; **Accepted:** May 23, 2018

1 Introduction

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