Curriculum Vitae

Name : Prof. Dr. rer. Nat. Hesham Ali El-Enshasy
Marital status : Married with two children
Date of birth : 08. 08. 1968
Nationality : Egyptian
Current Residency: Malaysia

Current Positions:

1- Professor at Bioprocess Engineering Department
School of Chemical and Energy Engineering
Faculty of Engineering
Universiti Teknologi Malaysia (UTM), 81310 Skudai, Johor, Malaysia

2- Director
Institute of Bioproducts Development
Universiti Teknologi Malaysia (UTM)
81310 Skudai, Johor, Malaysia
Office: 00607-5531573 Mobile: 006-0111-7739884
E-mail: henshasy@ibd.utm.my / hesham@utm.my
enshasy@gmail.com
website: https://www.utm.my/ibd/

Linkedin: https://www.linkedin.com/in/hesham-el-enshasy-70bb873/

1- Qualifications:

1.1 Education-Academic studies :

1.1.1. Ph.D. Industrial Biotechnology Apr. 1995 - Apr. 1998
(Dr. rer. nat. with very good)
Faculty of Biotechnology,
Technische Universität Carolo-Wilhelmina
TU Braunschweig, Germany

1.1.2 M.Sc. Microbiology Sept. 1990 - Dec. 1994
Faculty of Science
Ain-Sham Univ., Cairo, Egypt

1.1.3 M.Sc. Technology Management July 2009- Mar. 2012
Faculty of Management and Human Resource Development.
Universiti Technologi Malaysia, UTM, Johor, Malaysia.

1.1.5. B.Sc. Microbiology-Chemistry Sep. 1985 - May 1989
(Very good with honor degree)
Faculty of Science,
Ain-Sham Univ., Cairo, Egypt

1.2 Linguistic : English (fluent), German (fluent), Arabic (fluent)
1.3 Computer skill: Work with basic computer programs (MS Office, Word, Excell, Power Point, etc…). Many statistical analysis and graphic programs such as Origin, SPSS, Sigmaplot, etc…

1.2-Work Experience:

Current position(s):

Director (Feb. 2018 – present)
Institute of Bioproducts Development (IBD)
Universiti Teknologi Malaysia (UTM), 81310 Skudai, Johor, Malaysia

Professor (April 2009 – present)
Bioprocess Engineering Department
Faculty of Chemical Engineering and Energy
Universiti Teknologi Malaysia (UTM), 81310 Skudai, Johor, Malaysia

Previous positions:

Assistant Director for Innovation and Products Development (April 2009 – Feb. 2018)
Institute of Bioproducts Development (IBD)
Universiti Teknologi Malaysia (UTM), 81310 Skudai, Johor, Malaysia

Visiting Associate Professor (April 2008 – March 2009)
Faculty of Chemical and Natural Resources Engineering
Chemical Engineering Pilot Plant (CEPP)
Universiti Teknologi Malaysia (UTM), 81310 Skudai, Johor, Malaysia

Assistant Director of Mubarak City for Research Institutes Affairs (August, 2007-April, 2008)
Professor (2009- present)
Bioprocess development Dept.
City of Scientific Research and Technology Applications
Genetic Engineering and Biotechnology Research Inst.
New Burg Al-Arab, 21934 Alexandria, Egypt.

Researcher Assistant/Researcher/Assistant/Associate Professor/Professor (1989-2008)
Bioprocess development Dept.
City of Scientific Research and Technology Applications
Genetic Engineering and Biotechnology Research Inst.
New Burg Al-Arab, 21934 Alexandria, Egypt.

Ph.D. student (1995-1998)
Biochemical Engineering Dept.,
The National Research Center for Biotechnology (GBF), 38124-Braunschweig Germany

Researcher assistant (1989-1994)

Natural and Microbial products Dept.
National Research Center, Dokki, Cairo, Egypt.

Industrial Experience (work in Industry)
Researcher specialist/ Production specialist at Fermentation Plant (1990-1991)
El-Nasr Pharm. Chem. Co. Abou-Zabal, Cairo, Egypt.
(Establish new industrial platform for antibiotic production from laboratory scale up to 10,000 L stirred tank bioreactor).

Visiting Professor for the following Universities:

- Shizuoka University, Japan (honor guest Professor) (Since 2015 until present)
- Ohio State University, USA (2013/2014/2015/2016/2017)
- Lund University, Sweden. (2013/2015)
- Hamburg-Harburg University, Germany (2015)
- Leibniz Institute of Plant Biochemistry (2013, 2018)
- Queensland University of Technology, Australia (2014)
- King Saud University, Saudi Arabia (2013/2014/2015)
- Qassem University, Saudi Arabia. (2013)
- Xian University, China (2013)

Post-Doc. Positions
Post-doc. In Cell Culture Department
The National Research Center for Biotechnology (GBF), 38124-Braunschweig Germany
From Sept. 2002 – Nov. 2002
(Transient transfection of HEK-293 cell line and growth adaptation in serum free medium)

Post-doc. In Chemical Engineering, Dept., The Ohio State University,
Columbus, 43210 OH, USA
From Apr. 2001 – Oct. 2001
(Bioprocess Optimization for monoclonal antibody production in different scales)

3. Board Membership in Universities, Research Organizations and Industries

3.1. Board Membership in Universities and in International Research Organization

1. Board Member of Sustainable Agriculture Association, Hong Kong. 1 July 2019 – Present
2. Board Member of Center of Research and Applied Studies on Climate Change and Sustainable Development (C^3 SD-NRC), Cairo, Egypt. 28 Oct. 2019- Present.
3. Advisory Board Member of Bioprocess Platform of Technology Innovatin Agency (TIA), Durban, South Africa. 17 Jan. 2020 – Present.
4. Member of Board of Trustees, Al-Fanar University, Alexandria, Egypt. 28. Nov. 2018- Present.
5. Member of Research and Innovation Management Committee, Universiti Teknologi Malaysia. Feb. 2018- Present.

3.2. Board Memberhip and Consultation in International companies:

Biotechnology consultant (March. 2000-Present)
United Scientific Co. (New Brunswick/Eppendorf agent and Technology transfer activity). Biotechnology facility design, training program organizer, troubleshooting for Biotechnology Equipment, Bioprocess designer, technology transfer and technology development. (For companies and research organizations in the middle east).
Cairo, Egypt.

Biotechnology consultant (March. 2000- 2012)
Biogro International Co.
Consultant for bioprocess design and optimization for production of biological control agents, project management, technical assessment and technology transfer.
Cairo, Egypt

Scientific board member and Biobusienss consultant (Feb. 2022 – present)
Sateera Biontech Sdn. Bhd., (Johor Bahur, Malaysia)

Management Board Member and Bio-Business consultant (March. 2010- March 2016).
All Cosmos Industries Snd. Bhd. (Pasir Gudang, Johor, Malaysia).
For Technology Platform design, R&D, and International Business Development.
www.allcosmos.com

Advisory Board Member and Biobusiness consultant (Oct. 2014-Sep. 2015)
Free The Seed Sdn. Bhd. (Penang, Malaysia).
To develop RD platform and managing the intellectual capital plan.

Bio-Business consultant (April. 2008 – 2010)
For RTD, Technology Transfer and International Business Development
BioNova Co. (Athens, Greece).

Scientific Advisory Board Member (June 2010- June 2012)
For R&D and future International Business Development.

Return2Green Sdn. Bhd. (Penang, Malaysia)

Bio-Business Consultant (July 2011 – June 2012)
For Technology Platform Design and International Business Development
BioAlpha Sdn. Bhd. (Kuala Lumpur, Selangor, Malaysia)
www.bioa.net

Scientific board member and Biobusiness consultant (Feb. 2008 – Feb. 2009)
NewSummit Biopharma Group
Shanghai, China
www.newsummitbio.com

Research Management Positions and Academic Service:

1- Director for Institute of Bioproduct Development (Feb. 2018 – Present). Mangement of the overall activities of institute. Setup a new strategy for financial sustainability and internationalization plant for the institute. Increase the research performance and sustainable industrial cooperation with local and international companies through join laboratory and long term research and product development program. (total staff number of staff 70). Redesign and restructure units to achieve the new targe of the institute (financial sustainability, high research performance, and internationalization plan). Head of Safety and Quality Management of Institue of Bioproduct Development (Feb. 2018 – Present).

2. Assistant Director for Institute of Bioproducts Development (IBD) for Research and Innovation. (March 2011 – January 2018), Coordinate Research groups activities (30 researchers), put short-, mid-, longterm plan for research programs. Cooperation and networking with local, regional, and international research organizations. Set up goals/objectives in for of measurable KPI for each department. Annual assessment for researchers.

3. Coordinator for industrial cooperation program for R&D and industrial manufacturing of bioactive metabolites with different Malaysian and International companies, Institute of Bioproducts Development (IBD), Universiti Teknologi Malasyia, Malaysia. (March 2011- present). Set-up biotechnology incubator platform for local and international industries.

4. Head of Microbial Bioprocessing facility platform at IBD (A complete platform from cell banking up to large scale production in 1500 L bioreactor with complete downstream facility). (June 2008 – present)

5. Member in Top management committee, Institute of Bioproduct Development, Universiti Teknologi Malaysia, Malaysia. (March 2011 – February 2018). Head of to mamangement committee since February 2018

6. Assistant Director for Research Institutes Affairs at City of Scientific Research and Technology Applications, Alexandria, Egypt (Oct. 2007 until April 2008). Mangement of Research Activities in the frame of national research policay of Egypt. Coordinate institutional framework for interdisciplinary research between different

institutes. Review the research programs and support research activities using internal and external funds.

7. Head of the biotechnological pilot plant of genetic engineering and biotechnology research institute, City for Scientific Research, Alexandria, Egypt (2002-2008). This pilot plant with complete up stream fermentation facilities up to 300L bioreactor and different types of downstream equipments. Put strategic plan for operation and maintenance of the unit. Cooperation with industrial partners local/international for development of prototype products and bioprocess industrialization.

8. Head of the Biosafety committee of City of Scientific Research and Technology Applications (March 2005 until April. 2008). Implement governmental policy for Biosafety. Organizing proper training programs for all personel for biosafety. Put strategy for biowaste management and implement this strategy within the organization.

4. Academic degrees

4.1. Dr. rer. Nat. Industrial Biotechnology

„Optimization of production and excretion of recombinant Glucose oxidase in *Aspergillus niger* „
Supervisor: Prof. Dr. rer. Nat. Wulf-Dieter Deckwer, Prof. Dr. Ursula Rinas

Summary of work:
The theis was focused on the development of industrial platform for GOx production using recombinant *A. niger*. Bioprocess platform was developed based on microbiological and biochemical engineering parameters to cultivate the funcal cells in high cell density and to scale up the process to semi-industrial scale. The thesis includes also the development of a new model (morpho-physiological model) for fungal cell cultivation to maximize the recombinant protein production and increasing enzyme excretion.
Note: More information and the whole text of this work can be found under the following link:
http://www.biblio.tu-bs.de/ediss/data/19980514a/19980514a.html

4.2. M.Sc. Microbiology
" Microbiological and biochemical studies on the production of rifamycins "

Summary of work:
The thesis was focused on the production of rifamycins using free cell fermentation and repeated batch production using immobilized cells. In addition to natural polymers used for cell entrapment such as alginate gelatin and agar, inorganic support such as glass wool had been successfully used for cell immobilization.

4.3. M.Sc. Technology Management (Part I) July 2009- Dec. 2010
Business studies for 5 semsters for the following topics in master level:
1. Organizational Development
2. Marketing Management
3. Corporate Financial Management
4. Operation and Technology Management

5. Development and Economics
6. Human Resource Management
7. Supply Chain Management

4.3. M.Sc. Technology Management (Part II). –
" Studies on factors affecting business performance of biotechnology companies"

Summary of work:
The study was designed to develop a new on-line assessment research instrument to measure non-financial business performance of biotechnology companies. The research instrument was developed using mixed research approach (a combination between Delphi method and close ended questionnaire). Based on this study, a new non-financial business performance indexes (n-FBPI) were developed for online assessment for biotechnology companies. This research instrument is now available online under: www.biotechhorizon.com

5. RESEARCH/WORK EXPERIENCE

1- Industrial Biotechnology

1. Production of biomass, primary and secondary metabolites using microbial cells (biocontrol agents, bacterial and non-bacterial probiotics, amino acids, organic acids, antibiotics, polysaccharides, immunomodulators).
2. High cell density cultivation for production of biological control agents, enzyms using recombinant *E. coli, P. pastoris, A. niger* cell factories.
3. Production of bioactive compounds using immobilized cell system.
4. Production of Bioactive compounds for food and and feed industries.
5. Morpho-physiological models for microbial growth to enhance bioactive metabolites production using fungal/actinomycetes cells.
6. Mushroom cell cultivation in submerged culture sysem for discovery and production of bioactive/immunomodulators for human and animal use.
7. Bioprocess Engineering and industrial biotechnology platform design (Integrated approach: upstream/downstream). And scaling up of process up to 10,000 L bioreactors.
8. cGMP facility (Design, regulations, and full training)
9. Production of biotherapeutics using mammalian and human cells.
10. Cultivation of stem cell for tissue engineering.

2- Knowledge Based Economy/Management

1. Biotechnology Product Business Development /Marketing
2. Capital structure in knowledge based economy industries
3. Intellectual capital and capital structure in Biotechnology industries. Helping Biotechnology companies to improve intellectual capital value.
4. Management models of Private and Corporate Universities
5. Leadership and succession planning in High Education and Research Organizations.
6. Dynamic organizational structure to increase organization performance.
7. Human Capital Development in knowledge based economy industries as part of intellectual capital model.

8- Membership in International Organizations and Scientific Societies

8.1 World Academy of Art and Science (WAAS), Minnesota (USA)
Junior fellow Jan. 1997- Dec. 2001

8.2 Microencapsulation Research Group	***MRG***	(France)	since 1996
8.3 Society of Applied Bacteriology	***SAB***	(England)	since 1996
8.4 American Society of Microbiology	***ASM***	(USA)	since 1996
8.5 Society of Actinomycetes	***SAJ***	(Japan)	since 1996
8.6 Society of Industrial Microbiology	***SIM***	(USA)	since 1996
8.7 Anaerobic Society of the Americas	***ASA***	(USA)	since 1997
8.8 Egyptian Society for Biotechnology		(Egypt)	since 2002
8.9. American Institute of Chemical Engineering	***AIChE***	(USA)	since 2012

9. SERVICES

(a) Membership of Institutional, National, or International Scientific Advisory Board.

1. Member in Malaysian National Panel for Research/Development/Commercialization (Ministry of Higher Education, Malaysia). From Jan. 2015 to Dec. 2015.
2. Director of A15 section (Food), American Institute of Chemical Engineering (AIChE), USA, Elected on Dec. 2015 (Jan. 2016 – Dec. 2017).
3. Member in University Professor Board for PhD evaluation and examination. (Dec. 2015 – Present), University Teknologi Malaysia, UTM, Malaysia.
4. Member of Management Board of Institute of Bioproduct Development (Jan. 2011- Present). IBD-UTM, Malaysia
5. Scientific Advisory Board Member, Return 2 Green Industries Sdn. Bhd. (July 2010 – July 2011). Penang, Malaysia
6. Management and Advisory board member, Allcosmos Industries Sdn. Bhd. (March 2010 – Present). Johor Bahru, Malaysia
7. Scientific Advisory Board Member, Free the Seed Sdn. Bhd., Penang, Malaysia
   (Nov. 2014 – Present).
8. International Scientific Advisory Board Member. NewSummit Biopharma Group. Shanghai, China.
   (Feb. 2008 – Feb. 2009).
9. Executive board member. Centre of excellence for Research and Applied Studies on Climate Change and Sustainable Development (C3 SD-NRC). (October 2019 – Present).
10. Member of the Malaysian Committee of High Center of Excellence (HICoE), Ministry of Higher Education, Malaysia.
11. Board of trustees member of Al-Fanar University, Alexandria, Egypt.

(b) Membership of Conference Committees

1. Chairman for session Process Development for Sustainable Food and Biochemical Production (Oral Presentation Session). American Institute of Chemical Engineering (AIChE 2016), San Francisco, CA, USA (13-18 Nov., 2016).

2. Co-Chairman for 6th. International Conference of Biotechnology for Wellness Industries. (6th. ICBWI), Melaka Malaysia. (16-17 August, 2016).
3. Co-Chair for Session: Bio-Presepcting in Biological Agents for Sustainable Agriculture. 5th. International Conference: Plant, Pathogen, and People. Chalanges in plant pathology to benefit humankind. New Delhi, India. (23-27 February, 2016)
4. Co-Chairman for Session Advances in Food and Bioprocess Engineering (Oral Presentation Session). American Institute of Chemical Engineering (AIChE 2015), Salt Lake City, Utah, USA (8-13 Nov., 2015).
5. Chariman for Session Advances in Food and Bioprocess Engineering (Poster Presentation Session). American Institute of Chemical Engineering (AIChE 2015), Salt Lake City, Utah, USA (8-13 Nov., 2015).
6. Member in Scientific Advisory Board Committee. International Research Initiative Conference (IRIC). Contonments, Accra, Ghana, (10-11 Nov., 2015).
7. Member of Scientific Board Committee. The 17th. International Conference on Process Engineering and Advances Materials. Venice, Italy (13-14 April., 2015).
8. Member of Scientific Board Committee. The 17th. International Conference on Industrial Biotechnology and Bioenergy. Venice, Italy. (30-31 Dec., 2015).
9. Chariman for Session Biotechnology in Middle East and Arabic Countries (Oral Session). American Institute of Chemical Engineering (AIChE 2014), San Francisco, California, USA (16-21 Nov., 2014).
10. Co-Chairman of the 5th. International Conference of Biotechnology for Wellness Industries (ICBWI). Kuala Lumpur, Malaysia (21-22 June, 2014).
11. Scientific Committee, National Research Initiatives Conference (NaRIC), Accra, Ghana, 8-10 July, 2014.
12. Advisory Committee, Afro-Asian Congress on Microbes for Human&Environmental Health. (MICRO-BIOTECH 2014), 29 Sept., 1 Oct., New Delhi, India.
13. Member of Advisory Scientific Board Committee of the 4th. International Conference of Biotechnology for Wellness Industries (ICBWI). Kuala Lumpur, Malaysia (20-21, Jun., 2012).
14. Member of Advisory Scientific Board Committee of the 3rd.. International Conference of Biotechnology for Wellness Industries (ICBWI). Kuala Lumpur, Malaysia (8-9 Oct., 2010).
15. Member of Advisory Scientific Board Committee of the 2nd.. International Conference of Biotechnology for Wellness Industries (ICBWI). Kuala Lumpur, Malaysia (23-26 Jul., 2009).
16. Member of Advisory Scientific Board Committee of the 1st.. International Conference of Biotechnology for Wellness Industries (ICBWI). Kuala Lumpur, Malaysia (5-6, Aug., 2008).
17. International Committee. 15th. International Conference on Management Engineering, Dubai, UAE (2-3 Dec., 2013).

Editor-in-Chief, Associate Editor, and Editorial Board Member:

Books:

Reviewer for Book Proposals (John Wileys and Sons Publisher, USA). CRC Press (USA). Springer Verlag (Germany).

Editor/Editorial Board member for Book Series and Journals.

1. **Book Series:**

   1.1. Series Editor for Industrial Biotechnology Book Series, CRC Press, USA. 2018-present.
   https://www.routledge.com/Industrial-Biotechnology/book-series/CRCINDBIO

2. **Scientific Journals**

   Editor-in-Chief

   2.1 International Journal of Biotechnology for Wellness Industries (Editor-In-Chief) 2012-2018. www.lifescienceglobal.com/journals/international-journal-of-biotechnology-for-wellness-industries

   2.2. Biosciences Biotechnology Research Asia (Editor-In-Chief) 2016-present. www.biotech-asia.org

   Associate Editor/Section Editor/Review Editor

   2.3. Probiotics and Antimicrobial Proteins (Springer), Associate Editor (2022-Present) https://www.springer.com/journal/12602/editors

   2.4.NRC Bulletin (Springer Journal), (Section Editor) 2018-present https://bnrc.springeropen.com/about/editorial-board

   2.5.Frontiers in Biochemical Engineering (Assocaite Editor) 2020-present

   2.6.Frontiers in Microbiology (Review Editor) 2020- present

   2.7.Frontiers in Microbe and Virus Interaction Plants (Review Editor) 2020-present

   2.8.Frontiers in Plant Pathen Interactions (Review Editor), 2021-present

   2.9.Frontiers in Fungal Biotechnology (Guest Assocaite Editor) 2021.

   2.10. Sustainability (Guest Editor). In 2020-2020 (two special issues)

   2.11. Journal of Oxidative Medicine and Cellular Longevity (Guest Editor 2015) for special issue entitled: Medicinal Plants in Therapy: Antioxidant Activities. (one special issue)

   Editorial Board Member:

   2.12. Journal of Scientific and Industrial Research (Editorial Board Member) Since 2014

   2.13. Journal of Indian Phytopathology (Editorial Board Member) Since 2016

   2.14. Journal of Advanced Scientific Research (Editorial Board Member) Since 2013

   2.15. Journal of Agriculture Research and Innovation. (Editorial Board Member) Since 2014

   2.16. International Journal of Drug Discover and Medical Research Since 2012

   2.17. Journal of Mycology and Mycological Sciences (Editorial Board Member).
   https://medwinpublishers.com/OAJMMS/editorial-board.php

   2.18. Current Biotechnology (Editorial Board Member) Since 2018.

2.19. Indonesian Journal of Environmental Management and Sustainability (Editorial Board Member) Since 2018. https://ijoems.com/index.php/ijems/about/editorialTeam

Service as Reviewer

Journals

Biotechnology and Bioengineering, Biotechnology Progress, Process Biochemistry, Bioprocess and Biosystem Engineering, Applied Microbiology and Biotechnology, Biochemical Engineering Journal, Bioresource Technology, Biotechnology, Journal of Microbiology and Antimicrobial, PLoS One, Trends in Biotechnology, Biotechnology and Bioprocess Engineering, Ecotoxicology and Environmental Safety, Journal of Herbal Medicine, Carbohydrate Polymers Bioactive Carbohydrates and Dietary Fibre, Biocatalysis and agriculture Biotechnology, Extermophiles, Journal of Gastric Disorders, BMC Biotechnology, BMC Microbiology, Frontiers in Microbiology, and Many Other journals.

- Membership in NGO`s of social activities

11.1 The Mentally Retarded Development Association, (Cairo, Egypt). Member of the BOD (Board of directors) and responsible for 3 different rehabilitation centers of mentally retarded children. (1998-2008)

11.2 Member in Salasyl Al-khier organization. (Cairo, Egypt) A social organization for helping mentally retarded people, hospitals, Orphans and homeless children. (2001-2002)

10- Prizes/Awards

12.1. Distinguish Research Prize for 2001-2002 in Mubarak City for Scientific Research and Technology Applications.
12.2. Best Student Award Prize for M.Sc. Technology Management 2012. (Uinversiti Teknologi Malaysia).
12.3. IBD Research Award 2011 (IBD, UTM, Malaysia)
12.4. University Research Award 2012 (UTM, Malaysia).
12.5. Service Award Anugerah Khidmat Cemerlang IBD 2012
12.6. Excellent Research Award. Anugerah Penyelidikan Terbaik 2012 "Efficient Polysaccharide Production by *Pleurotus ostreatus* in submerged culture"
12.7. Best Service award. Anugerah Kerja Berkumpulan Terbaik 2012 "Establishment a platform for GMAC requirements to evaluate IBD facilities compliance in dealing with genetically modified organisms"
12.8. Gold Award , Bioinnovation Award 2012, Biomalaysia, 2012
12.9. Silver Award, 23rd. International Invention, Innovation and Technology Exhibition (ITEX), 2012
12.10. Bronze Award, 14th. International Art and Technology Exhibition (INATEX), 2012.
12.11. Gold Award, Bioinnovation Award 2013, BioMalaysia, 2013.
12.12. Excellence Award for the best collaborative laboratory with industry: Bioprocessing (BioEconomy Malaysia, The highest award in Malaysia for Academia-industry cooperation), 2015.
12.13. Best service award for Faculty of Chemical Engineering and Energy (UTM), 2017

12.14. Best Service award for International linkages and international program for Institute of Bioproduct Development (IBD-UTM), 2017
12.15. Excellence award for the best collaborative laboratory with industry: Bioprocessing. (BioEconomy Malaysia; The highest award in Malaysia for Academia-industry cooperation), 2017.
12.16. Best cooperation Award with industry (UTM), 2019 (the highest award in UTM for cooperation with industry, Only one award per year)
12.17. Best Publication Award (UTM), 2019.
12.18. Best Publication Award (UTM), 2020.
12.19. Best Cooperation Award with Industry (Faculty of Engineering), 2020. (Only one Award per year)
12.20. Best Publication Award (UTM), 2021.
12.21. Service Award Anugerah Khidmat Cemerlang IBD 2021.
12.22. Best Cooperation Award with Industry (Faculty of Engineering), 2022
12.23. Best Research Award for both research input/output (Projects and Publications), 2022

13.1. Teaching experience at Universities:

1- Immobilized cell technology: Basics and Applications.
(2000-2001)
Special course for M.Sc. students (course designer and coordinator)
Microbiology Dept., **Faculty of Pharmacy, Alexandria University**

2- Industrial genetic
(2002-2004)
Course for Ph.D. students (course designer and coordinator)
Microbiology Department, **Faculty of Pharmacy, Al-Azhar University**

3- Facilities and Infrastructure in Bioprocess Engineering
(2009-Present)
Course for M.Sc. students (course designer and coordinator)
Bioprocess Engineering Dept., Faculty of Chemical and Natural Resources Engineering, **University Technology Malaysia (UTM), Johor, Malaysia.**

4- Project Management and Regulation in Biotechnology
(2009-2011)
Course for M.Sc. students.
Bioprocess Engineering Dept., Faculty of Chemical and Natural Resources Engineering, **University Technology Malaysia (UTM), Johor, Malaysia.**

5- cGMP for bioprocess engineering (herbal and microbial platforms).
(2011- 2018)
Course for M.Sc. students.
Bioprocess Engineering Dept., Faculty of Chemical and Natural Resources Engineering, **University Technology Malaysia (UTM), Johor, Malaysia.**

6- Hazard and Operabiity study (HAZOP) for chemical and biochemical industries.

(2011-2018)
Course for M.Sc. Students
Bioprocess Engineering Dept., Faculty of Chemical and Natural Resources Engineering, **University Technology Malaysia (UTM), Johor, Malaysia.**

7- Commercialization strategy for herbal products. (2011-2014)
Course for M.Sc. students.
Bioprocess Engineering Dept., Faculty of Chemical and Natural Resources Engineering, **University Technology Malaysia (UTM), Johor, Malaysia.**

8- Microbiology: Basics and Applications (2012-2017)
Course for M.Sc. students
Bioprocess Engineering Dept., Faculty of Chemical and Natural Resources Engineering, **University Technology Malaysia (UTM), Johor, Malaysia.**

9- Safety in Chemical Industries (2016)
Course for M.Sc. Students
Bioprocess Engineering Dept., Faculty of Chemical Engineering and Energy, **University Technology Malaysia (UTM), Johor, Malaysia.**

10- Industrial Microbiology (2016-2017)
Undergraduate Course (B.Sc. Engineering)
Bioprocess Engineering Dept., Faculty of Chemical Engineering and Energy, **University Technology Malaysia (UTM), Johor, Malaysia.**

11- Research Methodology (2017-Present)
Course for M.Sc. and PhD Students
Bioprocess Engineering Dept., Faculty of Chemical Engineering and Energy, **University Technology Malaysia (UTM), Johor, Malaysia.**

Research Grant and Projects:

Industrial Projects	43
Total Industrial grant value	USD 1,459,000
Governmental funded Projects	15
Total government grant value	USD 992,000

(Appendix I)

Publications:

Type of Publication	Number of Publications
Articls in Internation Refereed Journals	288
Conference Papers	
Books	6
Book Chapters	43
Patents	2
Trade Secrets	3
Others	
(publications in Arabic Language)	3
(Publication in German Language)	1
Speaker in International Conferences	90
Abstracts/posters in interiiunational conferences	127

Citation Sources	Number of Citations
SCOPUS	2536 (H-index=27)
Google Scholar	4986 (H-index=36)

SCOPUS Author ID: 6602993477
ORCID ID: orcid.org/0000-0002-9712-2033
Google Scholar:
https://scholar.google.com/citations?user=MW4mqiQAAAAJ&hl=en
(Appendix II)

Supervision

Level	Number of Trainees
Postdoctoral Fellows	2
PhD Students	12 (finished)
	5 (submitted/in progress)
Master Students	35 (finished)
	7 (submitted/in progress)
Undergraduate Students (final year project/practical/summer student) (Appendix III)	More than 50

Reference Persons:

A. Academic Reference

1- Prof. Dr. Shang-Tian Yang,
Director, Ohio Bioprocess Research Consortium
Professor, Chemical Engineering in Food Science, Cell culture and Tissue Engineering
The Ohio State University.
140 West 19th. Avenue, Columbus, Ohio 43210, USA
Tel.: (614)292-6611, Fax: (614)292-3769
E-mail: yang.15@osu.edu

2-Prof. Dr. Rajni Hatti-Kaul
Head of Biotechnology Department
Centre for Chemistry and Chemical Engineering
Lund University
Getingevagen 60
Lund, PO Box 124 SE-221 00 Lund,
Sweden.
Tel: 0046462224840. Fax: 0046462224713
E-mail: Rajni.Hatti-Kaul@biotek.lu.se

3- Prof. Dr. Enoch Park
Research Institute of Green Science and Technology, Shizuoka University.
836 Ohya, Suruga-ku, Shizuoka 422-8529, Japan
Tel: 0081-54-238-4887, Fax: 0081-54-238-4887.
Email: park.enoch@shizuoka.ac.jp

4- Prof. Dr. An-Ping Zeng
Dean of Institute of Bioprocess and Biosystem Engineering
Technische Universität Hamburg-Harburg
Denickestr. 15
D-21071 Hamburg, Germany
Tel: +49 (0) 4042878 – 4183, Fax: +49 (0) 40 42878-2909
Email: aze@tuhh.de

B- Industrial Reference

1. Dato Dr. Tony Peng
CEO, Allcosmos Bio-tech Holding Corporation
CEO, Allcosmos Industries Sdn. Bhd.
PLO 539, Jalan Keluli, Pasir Gudang Industrial Estate,
81700 Pasir Gudang, Johor, Malaysia
Tel: +607-252 3788, +60197780495
Fax: +607-251 2588
Email: tonypeng@allcosmos.com

2. Mr. Joel William
Snr. Business Development Manager (Life Science, APAC)
M+W Group, M+W Singapore Pte. Ltd.
16 International Business Park,
#2-00, Singapore 609929.
Tel: +65 6725 9500
Email: joel.william@mwgroup.net

3. Mr. Salah Abdel Fattah
CEO Biogro International
24 Dr. El Sobky St., Dokki, Cairo, Egypt
Tel: +2 0233367880, +2 01144449939
Fax: +2 0237613211
Email: cleobio@link.net

Appendix I. (Research Projects and Grants)

1 Rifamycins Production by *Amycolatopsis mediterranei.* (team member)
(A Joint Project with the Egyptian Academy of Science)
From Nov. 1991 To Mar.1995

2 Production of Oxytetracyline from molasses using *Streptomyces rimosus* (team member).
(A Joint project with the Egyptian Sugar and Distillation Co.)
From Nov. 1991 To Mar. 1995

3 Lignin decomposition using thermophilic microorganisms (team member)
(Egyptian - American project)
From Apr. 1994 To Mar. 1995

4 Xanthan production from wastes of food industries (team member)
(Egyptian - American project)
From Jan. 1993 To Oct. 1993

5 Erythromycin production using some sugar industry by-products (team member)
(A Joint project with the Egyptian Sugar and Distillation Co.)
From June. 1998 To Jan. 2001

6 Production of thermostable β-galactosidase by recombinant strain of *Escherichia coli.*(team member)
(National Strategy of genetic engineering and biotechnology fund)
(Member in research team)
From Jan. 1999 To 2003

7 Isolation and characterization of bone marrow derived mesenchymal stem cells: Potential medical applications. (Co PI)
From 2002 To 2004

6.8. Production of monoclonal antibodies (Muromonab Anti CD3) for kidney transplant.
(National Strategy of genetic engineering and biotechnology fund) (100,000 LE)
(Principle investigator).
From 2004 To 2007

9. Production of anticancer compounds from mushroom
(Cooperative project Egypt-China). Co. PI
From 2004 To March 2008

10. Production of Phytase and Chitinase from Agricultural Wastes in Stirred Tank Bioreactor and Spouted Bed Bioreactor. (Cooperative project with Ohio State University, US). (60,000 US$)
(Principle Investigator).
From Feb. 2006 to March 2008

11. Production of anticancer compounds from plant cell. Part III. Cultivation of plant cells in photo-bioreactor.
(team member)
From April 2005 to April. 2008

12. Industrialization of recombinant protein production (TMOF) by *Pichia pastoris* in high cell density culture for Dengue control
(Industrial Project. EntoGenex Sdn Bhd., Malaysia)
(Project PI) (152,084 RM)
From Nov. 2008 to Oct. 2009

13. Bioprocess development and scaling up for the production of nitrogen fixing bacteria (co-investment Industrial project between CEPP, UTM and AllCosmos Sdn Bhd., Malaysia)
(Project PI) (450,000 RM)
From Sept. 2009 to Aug. 2013

14. Cell banking and optimization of medium composition for *Ganoderma lucidium*.
(Industrial project between IBD, UTM and BioScience Sdn. Bhd. Malaysia),
(Project PI) (15,000 RM)
From Mar. 2010 to Dec. 2010

15. Isolation and cultivation of mycorrhiza in pilot scale for biofertilizer applications.
(Industrial project Allcosmos Sdn. Bhd. Malaysia),
(Project PI) (15,000 RM)
From Sept. 2010 to Aug. 2011.

16. Bioprocess Development for High Cell Density Cultivation and Scaling up for *Hendersonia* sp.: a biocontrol agent for fungal oil palm disease.
(Industrial project Allcosmos Sdn. Bhd. Malaysia),
(Project PI) (45,000 RM)
From October 2011to Aug. 2012.

17. Efficient bio sorption of chromium and selenium by probiotic yeast using *Saccharomyces boulardii* to produce chromium yeast and selenium- yeast for human consumption. Research Project GUP fund)
Project Co-PI (100,000 RM)
From April. 2011 to March 2013

18. Establishing microbial platform for biofertilizer application (Phase I)
(Industrial Project, Allcosmos Sdn. Bhd., Malaysia)
(Project PI) (270,000 RM)
From May 2011 – Apr. 2014.

19 Efficient polysaccharide production by *Pleurotus ostreatus*
(UTM RU-Research Grant)
(Project PI) (40,000 RM)
From April 2011 – Sept. 2012.

20. Bioprocess optimization for efficient polysaccharide production by *Lactobacillus kefiranofacients* in semi-industrial scale.
(UTM RU-Research Grant)
(Project PI) (20,000 RM)
From Sept. 2012 – August 2013

21. Isolation, identification and growth kinetic studies of effective microbial consortium for waste water treatment
(Industrial Project for Indah Water Sdn. Bhd., Malaysia)
(Project PI) (176,000 RM)
From Sept. 2012 – Feb. 2014

22. Bioprocess optimization and scaling up studies for *Hendersonia* sp.: a biocontrol agent for fungal oil palm disease.
(Industrial Project for AllCosmos Industries Sdn. Bhd., Malaysia)
Project PI (100,000 RM)
From Sept. 2012 – March 2013

23. High cell density cultivation of *Bacillus firmus* for biocontrol of nematodes in black pepper plants (*Piper nigrum*).
(Industrial Project for AllCosmos Industries Sdn. Bhd., Malaysia).
Project PI (30,000 RM)
From July 2013 – Jan 2014

24. Development of cultivation strategy for high cell density cultivation of *Bacillus subtilis:* A biocontrolagent for fungal pathogens in black pepper plants (*Piper nigrum*)
(Industrial Project for AllCosmos Industries Sdn. Bhd., Malaysia).
Project PI (28,000 RM)
From July 2013 – Jan 2014

25. Bioprocess Development for semi-industrial production of *Bacillus thuringiensis*: a biocontrol agent against for agriculture application
(Industrial Project for Harita Go Gereen, Sdn. Bhd.)
Project PI, (110,000 RM)
From Oct. 2014 – Sep. 2015.

26. Establishing microbial platform for biofertilizer application (Phase II)
(Industrial Project, Allcosmos Sdn. Bhd., Malaysia)
Project PI, (270,000 RM)
From Jan. 2015 – Dec. 2017.

27. Scaling up studies on microbial strain for agricultural application
(Industrial Project, Arif Effective Sdn. Bhd., Malaysia)
Project PI, 381,000 RM
From April. 2016 – March. 2019.

28. Scaling up microbial fermentation for high cell mass and spore forming of *Bacillus thuringiensis*: a biocontrol agent for agriculture applications.
(Industrial Project for Harita Go Gereen, Sdn. Bhd.)

Project PI, (138,000 RM)
From Jan. 2016 – Dec. 2016.

29. High cell density cultivation of microbial probiotics for animal feed application.
(Industrial Project with SBG Feed, Sdn. Bhd.)
Project PI, (60,000 RM)
From Jan. 2017 – Dec. 2017

30. Bioprocess optimization for novel probiotic *Bacillus* strain for human and animal food supplements.
(Industrial Project for Harita Go Green, Sdn. Bhd.)
Project PI, (140,000 RM)
From Jan. 2017 – Dec. 2017

31. Development of new cultivation strategy for high cell mass of *Lactobacillus ruteri* in sermi-industrial scale.
(HiCOE project, governmental grant).
Project PI, (240,000 RM)
From Jan. 2017 – Dec. 2018.

32. Production of Cellulases and xylanases enzymes from *Trcihoderma* sp. for industrial applications.
(Co-funded Project between UTM and Harita Go Green Snd. Bhd.)
Project PI, (50,000 RM)
From Aug. 2017 – Jul. 2018.

33. Production of standardized *Melastoma malabathricum* and *Annona muricata* whole extract.
(HiCOE project, governmental grant)
Project Co-PI (247,950 RM)
From Jan. 2017 – Dec. 2018.

34. Investigation of chemical composition and bioactivities of non-fermented fermented soybean peptides.
Industrial Project for Master Natural Herbal Sdn. Bhd.)
Project PI (53,250 RM)
From Feb. 2018 – Mar. 2019.

35. Cultivation and freeze drying of *Spirulina platensis* and *Haematococcus pulviales*.
Industrial project for Dreamfore Sdn. Bhd.
Project Co-PI (58,490 RM)
Duration May 2018 – Jul. 2019.

36. Bioprocess Industrialization platform for microbial cell production for wellness industries.
Industrial project for All Cosmos Industries Sdn. Bhd.
Project PI (360,000 RM)
Duration: Jan. 2018 – Dec 2020.

37. Production of high biomass and polyhydroxyalkanoate (PHA) of *Ralstonia eutropha*.
Medium and bioprocess optimization.
Industrial project of Free the Seed Sdn. Bhd.
Project PI (30,000 RM)
Duration: Nov. 2018 – Oct. 2019.

38. Isolation, identification, and production of inoculum for Agarwood (Gaharu) resin production.
Industrial Project for Harita Go Green Sdn. Bhd.
Project PI (50,000 RM)
Duration Nov. 2018 – Oct. 2019

39. Bioprocess optimization and scaling up studies on microbial strains cultivation.
Industrial Project for Arif Effective Sdn. Bhd.
Project PI (264,000 RM)
Duration Apr. 2019 – Mar. 2021

40. Isolation, identification and biomass production of rhizosphere microbes and rice microbiota in semi-industrial scale
Industrial Project with Global Agro Innovation Limited (Hong Kong)
Project PI (10,000 USD)
Duration Jul. 2019- Jun. 2020

41. Novel herbal-based formulation for the development of ergonomic patch for transdermal delivery using nanobiotechnology approach.
Industrial Project CLM Research & Development Sdn. Bhd.
Project PI (88,868 RM)
Duration Jul. 2019 – Jun. 2020

42. Platform technology for development of microbial based feed for the production of insect larvae.
Industrial Project with Nutrient Technology Sdn. Bhd.
Project PI (360,000 RM)
Duration Sep 2019 – Aug 2022.

43. Scaling up bioprocess strategy for cultivation of aerobic bacteria for enhancement of plant growth and nutritional value. (Phase I).
Industrial Project with Arif Effective Sdn. Bhd.
Project PI (210,000 RM)
Duration. 1 Feb 2020 – 30 Jan 2021

44. Scaling up bioprocess strategy for cultivation of aerobic bacteria for enhancement of plant growth and nutritional value. (Phase II).
Industrial Project with Allcosmos Industries Sdn. Bhd.
Project PI (210,000 RM)
Duration. 1 July 2020 – 30 June 2021

45. Development of Probiotic Based Product for Poultry Feed Application.
Industrial Project with Global Agro Innovation Limited (Hong Kong)
Project PI (10,000 RM)

Duration: 1 June 2020 – 31 May 2021

46. Plant bioactive compounds identification
Industrial Project with ESE Woods Sdn. Bhd.
Project PI (16,000 RM)
Duration: 1 July 2020 – 30 Oct. 2020

47. Isolation, Identification and high cell mass and spore production of isolated strain *Bacillus amyloliquefaciens* H201 for agriculture, aquaculture and animal health industries.
Hatake Global Sdn. Bhd.
Project PI (35,250 RM)
Duration 1 Mar 2020 – 28 Feb 2021

48. A Proprietary Bio-Fermentation process to obtain biochemical 1,3-Propanediol (Pdo), using crude glycerine as raw material, where Pdo is mainly used to make polytrimethylene terephthalate (Ptt) polyester as clothing material in textile industry
HG Biochemical Sdn. Bhd.
Project PI (660,000 RM)
Duration: 1 Feb. 2020 – 31 Jan 2021

49. Bioprocess industrialization for phosphate solubilizing bacteria.
Incentive matching grant (UTM)
Project PI (20, 000 RM)
Duration 1 Jul. 2020 – 30 Jun 2021

50. Bioprocess industrialization for *Rhizobium* sp. bacteria for wellness industries.
Incentive matching grant (UTM)
Project PI (20,000 RM)
Duration 1 Jul – 30 Jun 2021

51. Bioprocess Development for production of growth hormones from submerged fermentation process for pineapple propagation.
Aladdin Pine Snd. Bhd., Malaysia
Project PI (60,000 RM)
Duration 1. Oct. 2020 – 30 Sep. 2022

52. Pineapple MD2 propagation through high technology quatenng and studies on high nutritional values and prebiotic properties of the produced fruits.
Aladdin Pine Sdn. Bhd., Malaysia
Project member (120,000 RM)
Duration 1. Oct. 2020 – 30. Sep. 2022

53. Isolation, Identification and medium optimization for production of growth hormones (Auxin) pror pineapple propagation.
Aladdin Pine Sdn. Bhd., Johor, Malaysia
Project member (60,000 RM)
Duration 1. Oct. 2020 – 30. Sep. 2022

54. Scaling up of bioprocessing strategy for cultivation of *Rhizopium* sp. for plant growth application. (Phase 3).

Ariff Efektif Sdn. Bhd.
PI of Project (210,000 RM)
Duration: 1 Jan. 2021 – 31 Dec. 2021

55. Bioprocess platform for isolation, identification and biomass production of soil microbes.

Allcosmos production of soil microbes.
PI of Project (120,000 RM)
Duration: 1 Jan. 2021 – 31 Dec. 2021

56. Development of scaling up strategy for N-fixing bacteria and other beneficial microbes.

Arif Efektif Sdn. Bhd.
PI of Project (RM 132,000)
Duration: 1 March. 2021 – 28 Feb. 2022.

57. Developed of powdered microbial product for wastewater treatment.

Indah Water Konsortium Sdn. Bhd.
Co-PI of Project (RM 20,000)
Duration: 1 Jan. 2022 – 31 Dec. 2021

58. Isolation, Identification and growth kinetic profiling for isolated strain for agriculture,
aquaculture and animal health industries application.

Hattake Sdn. Bhd.
PI of Project (RM 16,000)
Duration: 1 Mar. 2021 – 30 Sep. 2021.

Appendix II. Publications

Patents/Trade Secret

1. El Enshasy, H. (2006) New method for mushroom cell cultivation and peptidoglycan production in bioreactors. Egyptian Patent No. 24637. (Dated 7/6/2006).

2. El Enshasy, H and Ibrahim, A. (2006). Industrial unit for mushroom cell cultivation in submerged culture mixed by air under sterile condition for production of pharmaceutically important compounds in semi-industrial scale. Egyptian Patent No. 24730 (Dated (14/6/2006).

3. Hesham El Enshasy, Sulaiman Ngardian, Faisal Mohamed. (2018) Kacip Fatimah water soluble extract plus capsule. Trade Secret No. IP/TS/2018/0024

4. Hesham El Enshasy, Sulaiman Ngardian, Faisal Mohamed. (2018) Tongkat Ali water soluble extract plus capsule. Trade Secret No. IP/TS/2018/0456

5. Hesham El Enshasy, Daniel Dailin, Roslinda Malek (2020). Process cultivation of *Pleurotus ostreatus* for pleuran production. Trade Secret No. IP/TS/2020/0122

Books

1. New Trends in Large-Scale Mammalian Cell Culture: Cell Adaptation; 2012, (Elshereef, A.; El-Enshasy, H.; Abdeen, S. Eds). LAP Lambert Academic Publishing. Germany
   ISBN: 978-3659159367

2. Bioprocessing Technologies in Integrated Biorefinery for Production of Biofuels, Biochemicals, and Biopolymers from Biomass. 2013 (Yang S-T, El Enshasy HA, Thongchul N, Eds.), John Wiley&Sons, USA. ISBN 0470541954, 9780470541951. http://onlinelibrary.wiley.com/book/10.1002/9781118642047

3. The potential Benefits of Nanotechnology-based Pharmaceutical Formulations ; 2015 (Elmarzugi NA and El-Enshasy HA, Eds.). UTM Press, http://www.penerbit.utm.my/, ISBN 978-983-52-1006-8.

4. Probiotics, the Natural Microbiota in Living Organisms. Fundamentals and Applications. 2021. (El-Enshasy, HA, Yang S-T. Eds.). CRC Press. Taylor & Francis Group. USA. ISBN 9781138493605
   https://www.routledge.com/Probiotics-the-Natural-Microbiota-in-Living-Organisms-Fundamentals-and/Enshasy-Yang/p/book/9781138493605

5. Microbial Surfactants. Vol. I. Production and Applications. 2021. (R.Z. Sayyed, El Enshasy HA, Bee H). CRC Press. Taylor&Francis Group USA. ISBN 9780367521189
   https://www.routledge.com/Microbial-Surfactants-Volume-I-Production-and-Applications/Sayyed-Enshasy-Hameeda/p/book/9780367521189

6. Microbial Surfactants. Vol. II. Applications in Food and Agriculture. 2021. (R.Z. Sayyed, El Enshasy HA). CRC Press. Taylor&Francis Group USA ISBN. 9781032162478
https://www.routledge.com/Microbial-Surfactants-Volume-2-Applications-in-Food-and-Agriculture/Sayyed-El-Enshasy/p/book/9781032162478

Book Chapters

1- El-Enshasy, H.A.; Farid, M.A. and El-Diwany, A.I. (1996). Oxytetracycline production by free and immobilized cells of *Streptomyces rimosus* in batch and repeated batch cultures. *In* Progress in Biotechnology Vol. 11 „Immobilized cells: Basics and Applications" pp. 437- 443. (Eds. Wijffels, R.H.; Buitelaar, R.M.; Bucke, C. and Tramper, J.). Elsevier Science B.V.

2- Daba, A.; El-Demellawy, M. and El-Enshasy, H. (2005). Anticancer Activity of Polysaccharides Produced by *Pleurotus ostreatus* in Submerged Culture. *In* Genetic and Cellular Biology of Basidiomycetes. (Pisabarro, A.G. and Ramírez, L. Eds.). Universidad Pública de Navarra, Pamplona, Spain. Pp.43-55

3- El Enshasy, H. (2007). Filamentous Fungal Cultures-Process Characteristics, Products, and Applications. *In* Bioprocessing for value-added products from renewable resources. (S.T. Yang, Ed.). pp. 225-261. Elsevier Press (ISBN-10: 0-444-52114-3).
http://www.elsevier.com/wps/find/bookdescription.cws_home/707941/description#description

4- El-Enshasy, H.; El Baz, A. and Ammar, E. (2007). Simultaneous production and decomposition of different rifamycins during *Amycolatopsis mediterranei* growth in shake flask and in stirred tank bioreactor. *In* Communicating Current Research and Educational Topics and Trends in Applied Microbiology Vol. I, pp 315-321. Formatex Research Centre: Badajoz, Spain.

5- El Enshasy, H. (2010). Immunomodulators. *In.* The Mycota (2nd. Edition). Vol.X. (Hofrichter, M. Ed.) Springer Verlag. pp. 165-194.
http://www.springerlink.com/content/g722710785314804/

6- El Marzugi, N. El Enshasy H., Abd Malek R., Othman Z., Sarmidi M. R., and Abdel Aziz_R. (2010). Optimization of cell mass production of the probiotic strain *Lactococcus lactis* in batch and fed-batch culture in pilot scale levels. *In.* Current Research, Technology and Education Topics in Applied Microbiology and Microbial Biotechnology. Vol. 2 (Médez-Vilas, A. Ed.). Formatex Research Centre, Badajoz, Spain. Pp. 873-879. ISBN 978-84-614-6195-0

7- Roslinda Abd Malek, Sallehhuddin bin Hamdan, Hesham A. El Enshasy, Nor Zalina Othman, Noor Azwani Zainol, Mohamad R. Sarmidi, Ramlan, A. Aziz. (2010). Production of *Lactobacillus salivarius*, a new probiotic strain isolated from human breast milk, in semi-industrial scale and studies on its functional characterization. *In.* Current Research, Technology and Education Topics in Applied Microbiology and Microbial Biotechnology. Vol. 2. (Médez-Vilas, A. Ed.). Formatex Research Centre, Badajoz, Spain. Pp 1196-1204. ISBN 978-84-614-6195-0

8- El Enshasy, H.A., Maftoun, P. and, Abd Malek, R. (2012). Pleuran: Immunomodulotor Polysaccharide from Pleurotus ostreatus, Structure, Production and Application *In.* Mushrooms: Types, Properties and Nutrition (Andres, S. and Baumann, N. Ed.). Nova publisher, NY, USA). ISBN: 978-1-61470 130-9. pp 153-172. https://www.novapublishers.com/catalog/product_info.php?products_id=26333

9- Hesham El Enshasy, Nor Zalina Othman, Ashraf El Baz. (2012). High cell density cultivation of microbial cells: efficient high cell mass production strategy for biotherapeutic yeast *Saccharomyces boulardii*. *In.* Biotechnology development in agriculture, industry and health. (Vol. 1 Current industrial application&Future trends). Zainul Akmar Zakaria, Wan Azlinda Ahmad, and Zainoha Zakaria (Eds.). UTM Press. Pp 199-218. ISBN- 978-983-52-0900-0.

10- Nor Zalina Othman, Hesham El Enshasy, Mohamad Roji Sarmidi, Rajni Hatti-Kaul (2012). Phytase and its Biosynthesis. *In.* Biotechnology development in agriculture, industry and health. (Vol. 1 Current industrial application&Future trends). Zainul Akmar Zakaria, Wan Azlinda Ahmad, and Zainoha Zakaria (Eds.). UTM Press. Pp 249-272. ISBN- 978-983-52-0900-0.

11- Roslinda Abd Malek, Wahida Abd Rashid, Subeesh Kunhi Kandiyil, Ramlan Aziz, Hesham A. El Enshash, Rajni-Hatti-Kaul. (2012). Production of recombinant xylanase using *Escherichia coli* and its industrial application. *In.* Biotechnology development in agriculture, industry and health. (Vol. 1 Current industrial application&Future trends). Zainul Akmar Zakaria, Wan Azlinda Ahmad, and Zainoha Zakaria (Eds.). UTM Press. Pp 273-308. ISBN- 978-983-52-0900-0.

12- El Enshasy, H; Abdel Fattah, Y. and Othman, N.Z (2013). "Amylases" *In:* Bioprocessing Technologes in Integrated Biorefinery from Production of Biofuels, Biochemicals, and Biopolymers from Biomass. (Yang S-T, El Enshasy HA, Thongchul N, Eds), John Wiley&Sons, USA. pp 111-130. **https://doi.org/10.1002/9781118642047.ch7**
ISBN 0470541954, 9780470541951
http://onlinelibrary.wiley.com/doi/10.1002/9781118642047.ch7/summary

13- El Enshasy, H. (2014). "Measurement and Control of Cultivation Parameters During Mammalian Cell Cultivation and Their Impact on Bioprocess Performance" *In.* Industrial Biotechnology in Non-aligned and Other Developing Countries: Current Status and Future Prospects. (Esterhuizen-Londt, M. and Badr, A. Eds.), Daya Publishers, Delhi, pp. 55-64 (ISBN 978-93-5124-309-0).

14- Elmarzugi NA, Eid AM, El-Enshasy HA, Aziz R (2015) Nanoemulsion, *In* The potential Benefits of Nanotechnology-based Pharmaceutical Formulations (El Marzugi NA and El Enshasy HA). UTM Press. http://www.penerbit.utm.my/, ISBN 978-983-52-1006-8. pp 01-42, Johor, Malaysia.

15- El Enshsay HA, Abdel Hamid M, Abd Malek R, Elmarzugi N, Sarmidi MR (2016). "Microbial metabolites in cosmetic industries " *In:* The Hand Book of Microbial Bioresources. (Gupta VK, Sharma GD, Touhy MG, Gaur R, Eds.), CABI, Oxfordshire, UK pp: 388-405 (ISBN 9781780645216). http://doi.org/10.1079/9781780645216.0388

16- El Enshasy HA, Othman NR, Elsayed EA, Sarmidi MR, Wadaan MA, Aziz R (2016). "Functional Enzymes for Animal Feed Applications" *In:* The Hand Book of Microbial Bioresources. (Gupta VK, Sharma GD, Touhy MG, Gaur R, Eds.), CABI, Oxfordshire, UK pp. 296-312. (ISBN 9781780645216). https://doi.org/10.1079/9781780645216.0296

17- El Enshasy HA, Azman D, Peng T, Aziz R, Othman NZ, Malek RA (2016). "Recent Development of Biological Control Agents for Oil Palm Diseases: From Strain Isolation to Product Development. *In* Perspectives of Plant Pathology in Genomic Era (Chowdoppa P, Sharma P, Singh D, Misra AK Eds.). Today&Tomorrow Printers and Publications. New Delhi, India pp. 415-448. ISBN 81-7019-526-4 (India), ISBN 1-55528-382-9 (USA).

18- El Enshasy, H.A., Kandiyil SK, Malek R, Othman NZ. (2016). "Microbial Xylanases: Sources, Types, and Their Applications. *In.* Microbial Enzymes in Bioconversions of Biomass (Gupta VK Ed.). Springer International Publishing Switzerland. Pp 151-213. ISBN 978-3-319-43677-7 (print), ISBN 978-3-319-43679-1 (online). DOI https://doi.org/10.1007/978-3-319-43679-1_7

19- El Enshasy H, Abdel Hamed M, Boumehira A (2017). "Palm oil: Process, characterization, and applications. *In.* Edible oils: Extraction, processing, and application (Chemat S Ed.) CRC Press, Taylor & Francis Group. Boca Roton, FL, USA. Pp 127-154. ISBN 978-1-488-752091. https://doi.org/10.1201/9781315152493

20- El Enshasy HA, Hanapi SZ, Abdelgalil SA, Malek RA, Pareek A (2017). Mycoremediation, Decolorization potential of fungal lignolytic enzymes. (Prasad R Ed.) Mycoremediation and Environmental Sustainability. Fungal Biology. Springer. Pp 69-104. (Print) ISBN. 978-3-319-68956-2, (Online) ISBN 978-3-319-68957-9. DOI: https://doi.org/10.1007/978-3-319-68957-9_5

21- Perez, MF, Isas AS, Aladdin A, El Enshasy H, Dib JR (2018). Killer yeasts as biocontrol agents of postharvest fungal diseases in lemons. *In* Sustainable Technologies for the Management of Agricultural Wastes. (Zakaria Z. Ed.). Applied Environmental Science and Engineering for a Sustainable Future. Springer, Singapore. ISBN 978-981-10-5061-9 (Print), ISBN 978-981-10-5062-6 (Online): DOI: http://doi.org/10.1007/978-981-10-5062-6_7.

22- Aladdin A, Dib JR, Abd Malek R, El Enshasy H (2018). Killer yeast, a novel biological control of soilborne diseases for good agriculture practice. *In* Sustainable Technologies for the Management of Agricultural Wastes. (Zakaria Z. Ed.). Applied Environmental Science and Engineering for a Sustainable Future. Springer, Singapore. ISBN 978-981-10-5061-9 (Print), ISBN 978-981-10-5062-6 (Online): DOI: http://doi.org/10.1007/978-981-10-5062-6_6

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ISBN 978-981-10-8665-6 (Print), ISBN 978-981-10-8666-3 (Online): pp. 211-232. https://doi.org/10.1007/978-981-10-8666-3_2

24- El Enshasy HA, Hanapi SZ, Abd Malek R, Abdelgalil SA, Leng OM (2019). Endophytic fungi: the desired biostimulants for essential oil production. *In* Endophytic Fungi. Pp. 211-232. (Singh BP, Chahakchuank L, Passari AK Eds.). Springer Verlag. ISBN 978-3-030-03588-4 (Print), ISBN 978-3-030-03589-1 (Online) https://doi.org/10.1007/978-3-030-03589-1_10

25- Soltani M, Abd Malek R, Elmarzugi N, Mahmoodaily MF, Uy D, Leng OM, El Enshasy HA (2019). Cordycepin: A biotherapeutic molecule from medicinal mushroom. *In.* Biology of Macrofungi (Singh BP, Chhakchhauk L, Passari AK Eds.) Springer Verlag. Pp. 319-349. ISBN 978-3-030-02621-9 (Print). ISBN 978-3-030-02622-6 (Online).
https://doi.org/10.1007/978-3-030-02622-6_16

26- Dailin DJ, Hanapi SZ, Elsayed EA, Sukmawati D, Ean Azleee NI, Eyamalay J, Siwapiragam V, El Enshasy H. (2019). Fungal Phytases: Biotechnological applications in food and feed industries. *In* Recent advancement in white biotechnology through fungi. Vol. 2. Perspective for value added product and environments. (Yadav A., Ed.), Springer Verlag pp 65-99. ISBN 978-3-030-14846-1.
https://doi.org/10.1007/978-3-030-14846-1_2

27- El Enshasy HA, Agouillal F, Mat Z, Abd Malek R, Hanapi SZ, Leng OM, Dailin DJ, Sukmawati D. (2019). *Pleurotus ostreatus*: a biofactory for lignin degradation enzymes of diverse industrial applications. *In* Recent advancement in white biotechnology through fungi. Vol. 3. Perspective for sustainable environment (Yadav A., Ed.), Springer Verlag pp. 101-152. ISBN 978-3-030-25505-3 (Hardcopy), 978-3-030-25506-0 (E-Book)
https://doi.org/10.1007/978-3-030-25506-0_5

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Lectures in International Conferences/Workshops

1- El-Enshasy, H.A, *Kinetic of natamycin production and degradation under different glucose concentrations in batch and fed-batch cultures*. The 11th. International Symposium on the Biology of Actinomycetes. Oct. 24-28, 1999, Crete, Greece.

2- El-Enshasy, H. A. *Studies on the kinetic of streptomycin production and degradation by Streptomyces griseus during the scaling up from shake flask to bioreactor*. Role of Biochemistry in Environment and Agriculture. Feb. 6-8, 2001, Cairo, Egypt.

3- El-Enshasy, H.A. *Prediction of Bottle Neck(s) for Technology Transfer of Antibiotic Production from Laboratory Scale to Pilot Plant: Case of Study-Natamycin*. Assiut University 3rd. Pharmaceutical Sciences Conference. March 5-6, 2002. Assiut, Egypt. (Invited speaker)

4- El-Enshasy, H.A. *Mammalian Cell Technology: The Biofactory of the future human therapeutics in pharmaceutical industries*. The 1st. International congress pharmaceutical & drug industries division, National Research Centre, March 24-26. 2003, Cairo. Egypt. (Invited speaker)

5- El-Enshasy, H.A. *Kinetic of cell growth and amino acid metabolism of Human Embryonic Kidney HEK-293 cells grown in serum free medium at different EDTA concentrations*. The 1st. International congress pharmaceutical & drug industries division, National Research Centre, March 24-26.2003, Cairo. Egypt. (Invited speaker)

6-El-Enshasy, H.A. *Eukaryotic cell factories: Mammalian and Insect cells. New Era of Biotechnology in Pharmaceutical Industries*. 22nd. September, 2003, Mubarak City for Scientific Research, New Burg Al Arab, Alexandria, Egypt. (Invited speaker)

7- El-Enshasy, H.A. *Glucose oxidase from bench to market.* US-Egypt Workshop on Genetic Engineering and Genomics, Mubarak City for Scientific Research. 5-8 December, 2003, Alexandria, Egypt. (Invited speaker)

8- El-Enshasy, H.A. *Shear stress: The most important barrier for scaling up of mammalian cells cultivation from laboratory T-flask to large scale bioreactors*. The 1st. International Conference on Green&Advanced Engineering Technologies. National Research Centre, 3-6 January, 2004. Cairo, Egypt.

9- El-Enshasy, H.A. *Human and Animal cells: The new biofactories of the future drugs in pharmaceutical industries*. The 4th. International Pharmaceutical Science Conference. March 6-7, 2004, Assiut, Egypt. (Invited speaker)

10- El-Enshasy, H.A. *Overproduction of Gluconic Acid by Combined Use of Genetic Engineering and Bioprocess Development Technologies.* The 1st. International Conference of Genetic Engineering and Biotechnology divistion. March 15-17, 2004, Cairo, Egypt. (Invited speaker)

11- El Enshasy, H.A. Human and Animal Cells: *The New Biofactories of the Future Drugs in Pharmaceutical Industries.* The 3rd. Symposium on Scientific Research and Technology Development, Outlook in the Arab World, 11-14 April., 2004, Ryadh, Saudi Arabia. (Invited Speaker)

11- El-Enshasy, H.A. *The Use of Antibiotics in Immobilized Form: A Controlled Drug Delivery System to Minimize the Risk of Drug Misuse/Misdose in Developing Countries*. The World Conference on Magic Bullets. Celebrating Paul Ehrlich´s 150th. Birthday. September 9-11, 2004. Nürnberg, Germany. (Invited speaker).

12- El Enshasy, H.A. *Biotechnology and Biobusiness of Probiotics: From slant to powder. The Egyptian-German Nutrition Workshop. Probiotics for Health Promotion (Present Status and Future Prospectives).* May 14-16, 2005. Giza, Egypt. (Invited Speaker).

13- El Enshasy, H.A. *Anticancer activity of polysaccharides produced by Pleurotus ostreatus in submerged culture*. Genetics and Cellular Biology of Basidiomycetes VI. 3-6 June, 2005. Pamplona, Spain

14- El Enshasy, H.A. *New Biofactories in Pharmaceutical industries using non-microbial cells. Biotechnology the language of future in biomedical field*. 28 June-6 July, 2005. Cairo. Egypt (Invited speaker).

15- El Enshasy, H.A. *Biotechnology Development in Egypt: Bio-Academia and Bio-Industry.* International Greek Forum for Biotechnology, (IGBF2), July 1-3, 2005, Athens, Greece. (Invited speaker).

16- El Enshasy, H.A. *Bioactive Compounds from Mushroom: From Farm to Pharma.* July, 21st. Universiti Teknologi Malaysia (UTM), CEPP, Skundai, Johor, Malaysia. (Invited speaker)

17- El Enshasy, H.A. *Biopharmaceuticals Global Business Growth, Market Segments and Innovative Products.* July 24th. Universiti Teknologi Malaysia (UTM), City Campua, Kuala Lumpur, Malaysia. (Invited Speaker)

18- El Enshasy, H.A. *The importance of local science park as Biobusiness partner for dynamic technology transfer and industrialization of innovative bioproducts in Egypt.* International Greek Forum for Biotechnology, (IGBF3). Oct. 4-7, 2006, Athens, Greece. (Invited speaker).

19- El Enshasy, H.A. *The role of Mubarak City for Scientific Research in Technology Transfer, Implementation and Development in Biopharmaceutical Business.* International Greek Forum for Biotechnology (IGBF4). Feb. 2-3, 2008. Athens, Greece (Invited Speaker).

20- El Enshasy, H.A. *Industrial Bioprocessing for Metabolites Production.* 1st. International Conference on Biotechnology for the Wellness Industry (1st. ICBWI), August 5-6, 2008. Kuala Lumpur, Malaysia (Invited Speaker).

21- El Enshasy, H.A. *cGMP standard for cell culture and tissue engineering*. TEMSA (Teissue Engineering Society Malaysia) Seminar "From Fundamental to Clinical". June 17th. 2009. Kuala Lumpur, Malaysia (Invited Speaker)

22- El Enshasy, H.A. *Bioprocess development using biofactory-based and bioprocess based platforms.* 2nd. International Conference on Biotechnology for the Wellness Industry (2nd. ICBWI) July 23-26, 2009. Kuala Lumpur, Malaysia (Invited Speaker)

23- El Enshasy, H.A. *Bioprocess development for large scale production of anticancer exo-polysaccharide by Pleurotus ostreatus in submerged culture.* International Conference on Chemical and Bioprocess Engineering (ICCBPE) August 12-14, 2009. Kota Kinabalu, Malaysia.

24- El Enshasy, H.A.: *Development of Bioprocess Platforms for Industrialization of Biotechnology products.* Invited speaker. Biotechnology Research Centre, Tripoli-Libya. 1-6 December, 2009, Tripoli, Libya. (Invited Speaker)

25- El Enshasy, H.A. *Industrial Platform Design for Probiotic Production using Different Biofactories.* 3rd. International Conference on Biotechnology for the Wellness Industry (3rd. ICBWI) October 8-9, 2010. Kuala Lumpur, Malaysia (Invited Speaker)

26- El Enshasy, H.A. *Institutional and business support framework for industrial development in biotechnology sector: an example for NTBFs.* United Nations Economic Commission for Africa meeting-Committee on Development Information Science and Technology (CODIST-II), May 2-5, 2011. Addis Ababa, Ethiopia (Plenary Lecture session, invited speaker).

27- El Enshasy, H.A. *Role of Education system on promoting the new technology based firms (n-TBF) and overall country's knowledge based economy.* 11th. GOPIO International Convention 2012. Education Conference, April. 21-22, 2012. Faculty of Arts&Science University Malaya, Kuala Lumpur, Malaysia (Invited Speaker)

28- El Enshasy, H.A. *Role of IBD in the growth of biotechnology industries as one of the main drivers of knowledge based economy in Malaysia*. The 3rd. Scientific Meeting of the Chair of Advanced Proteomics & Cytomic Research (CAPCER). May 11-17, 2012. Faculty of Science, King Saud University, Riyadh, Saudi Arabia (Invited Speaker)

29- El Enshasy, H.A. *Integrated bioprocess platform design for Pleuran production: an immunomodulator/anticancer polysaccharide produced by Pleurotus ostreatus*. The 3rd. Scientific Meeting of the Chair of Advanced Proteomics & Cytomic Research (CAPCER). May 11-17, 2012. Faculty of Science, King Saud University, Riyadh, Saudi Arabia (Invited Speaker)

30- El Enshsay, H.A. *Development of non-financial business performance indicator (n-FBPI) for biotechnology companies.* The 4th. International Conference on Biotechnology for the Wellness Industry (4th. ICBWI) June 20-21, 2012. Kuala Lumpur, Malaysia (Invited Speaker)

31- El Enshasy, H.A. *Recent advances in bioprocess development for mass production of medicinal polysaccharides and beneficial microbes for health and agriculture industries in Malaysia*. AIChE Annual Meeting, Oct. 28th. – Nov. 2nd., 2012 , Pittsburgh, PA, USA. (Invited Speaker)

32- El Enshasy, H.A. *Industrial platform design for large scale production of probiotic yeast.* AIChE Annual Meeting, Oct. 28th. – Nov. 2nd. , Pittsburgh, PA, USA. (Invited Speaker)

33- El Enshasy, H.A. *Integrated Industrial Bioprocess: From Platform Design to Economic Assessment.* 1st. International Winter School on Industrial Biotechnology, 2-6 Dec., 2012. Cairo, Egypt. (Invited Speaker)

34- El Enshasy, H.A. *Measurement and Control Systems in Bioprocess Industries (on-line; off-line and in-line systems).* 1st. International Winter School on Industrial Biotechnology, 2-6 Dec. 2012, Cairo, Egypt. (Invited Speaker)

35- El Enshasy, H.A. *Development of Biopesticides: From Laboratory to Commercialization.* 5th. International Symposium for the Development of Integrated Pest Management for Sustainable Agriculture in Asia and Africa, 18-20 Dec. 2012, Kota Kinabalu, Sabah, Malaysia. (Invited Speaker).

36. El Enshasy, H.. *Biocatalysis in BioEconomy: From research design to platform design.* International BioEconomy Conference. 6-7 June, 2013, Halle, Germany. (Invited Speaker).

37. El Enshasy, H. *Industrial platform design for large scale production of pleuran: An immunomodulator/anticancer polysaccharide from Pleurotus ostreatus.* AIChE Annual Meeting, 3-8 November 2013 , San Francisco, CA, USA. (Invited Speaker).

38. El Enshasy, H. *Cassava: A Potential Feedstock for Biorefinery Industries in Tropical and Subtropical Regions.* 7th. Annual Berkeley Bioeconomy Conference. "Biofuel as Part of a Sustainable Strategy". 26-27 March 2014, Berkeley, San Francisco, CA, USA (Invited Speaker).

39. El Enshasy, H. *Development of Techno-Industrial Platform for Dengue Control.* 2nd. International Conference on Dengue Fever Situation and its Control. 20-21 September 2014, Universiti Teknologi Malaysia, Johor Bahru, Malaysia (Invited Speaker).

40. El Enshasy, H. *Industrial Platform Design for Fungal Phytase Production in Semi-Industrial Scale.* AIChE Annual Meeting, 16-21 November 2014 , Atlanta, GA, USA. (Invited Speaker).

41. El Enshasy, H. *Bioprocess Technology Service at IBD: The Proper Techno-Industrial Platform Catalyst for Biotechnology Business.* Technology Transfer Showcase. Nov. 14th, 2015. UTM, Johor Bahru, Malaysia (Invited Speaker)

42. El Enshasy, H. *Techno-industrial Platform for Immunomodulator/Anticancer Compounds Production Using Medicinal Mushrooms.* 24 March, 2015. Shizouka University, Shizouka, Japan (Invited Speaker)

42. El Enshasy, H. *Biotechnological Application as Clean and Biofriendly Approach in Water Treatment Plant.* Water Malaysia 2015, 22-24 April 2015, Kuala Lumpur, Malaysia (Invited Speaker)

43- El Enshasy, H.A.. *Human and Animal Cells: The Biofactories for the Production of Innovative Drugs.* The 5th. Scientific Meeting of the Chair of Bioproduct Development. 4th. May, 2015. Faculty of Science, King Saud University, Riyadh, Saudi Arabia (Invited Speaker)

44- El Enshasy, HA. *Bioprocess Design for Mushroom Polysaccharides Production of Anticancer/Immunomodulating Activities in Industrial Scale.* ACHEMA 2015, 14-19 June, 2015, Frankfurt, Germany (Invited Speaker).

45. El Enshasy HA. *Industrial platform desing for large scale production of probiotics microorganisms.* 23rd. June, 2015, Lund University, Lund, Sweden (Invited speaker/visiting Professor).

46. El Enshasy HA. *Industrial production of microbial phytase: A key component of animal feed.* 25th. June, 2015, Hamburg-Harburg University, Hamburg, Germany (Invited speaker/visiting professor)

47. El Enshasy HA. *Biotechnology solutions for Good Soil Sustainability Practice (GSSP).* International Year fof Soil Seminar. 14 Sept., 2015. UTM, Johor Bahru, Malaysia (Invited Speaker).

48. El Enshasy, H. *Design of Techno-industrial platform as pro-active recruitment approach for biotechnology/bioprocess engineering post-graduate students*". AIChE Annual Meeting, 8-13 November 2015, Salt Lake City, UT, USA. (Invited Speaker).

49. El Enshasy, H. *Bioprocess Platform Design for Large scale production of selenium-free and selenium rich yeast for nutraceutical and pharmaceutical applications.* AIChE Annual Meeting, 8-13 November 2015, Salt Lake City, UT, USA. (Invited Speaker).

50. El Enshasy, H. *Bioprocess Platform Design for Kefiran Production in Semi-Industrial Scale.* AIChE Annual Meeting, 8-13 November 2015, Salt Lake City, UT, USA. (Invited Speaker).

51. El Enshasy, H. *Establishing strong cooperative framework in education, science, technology, and knowledge based product development: A new era for cooperation between Shizuoka University and Universiti Teknologi Malaysia.* Shizuoka University International Symposium 2015 by inter-academia Asia and headquarters for promotion of interdisciplinary domain research. 1 December, 2015. Shizuoka University (Inved Speaker)

52. El Enshasy, H. *Techno-industrial platform design for the production of fungal-based biological control agent for the development of smart fertilizers: From lab. to market.* 5th. International Conference: Plant, Pathogen, and People. Chalanges in plant pathology to benefit humankind. 23-27 February, New Delhi, India. (Invited Lead speaker).

53. El Enshasy, HA. *Integrated platform design for large scale production of immunomodulators using mushroom biofactory.* International Conference on Nutraceuticals and Functional Foods. 7-9 July 2016. Kalamata, Greece (Invited First Keynote Speaker)

54. El Enshasy, HA. *Role of Research Organization in Business Development of Biotechnology Industries.* International Conference of Biotechnology for Wellness Industries (6th. ICBWI), 16-17 August, 2016. Kuala Lumpur, Malaysia (Invited Plenary Speaker).

55. El Enshasy, HA, *Critical Role of Universities and Research Organizations in the Industrial RD&I Cycle and Sustainable Growth of Biotechnology Business*. Johor International BioEconomy Conference (JIBC 2016), 24-25 October, 2016. Johor Bahru, Malaysia (Invited Plenary Speaker).

56. El Enshasy HA, *Bioprocess Development for Pleuran Production By Pleurotus Ostreatus Using Submerged Cultivation System in SemiIndustrial Scale.* AIChE2016 Annual Meeting, 13-18 November 2016, San Francisco, CA, USA. (Invited Speaker).

57. El Enshasy HA, *Development of Complete Industrial Process for Kefiran Production: An Important Polysaccharide for Food and Pharmaceutical Industries.* International workshop on advanced Nanovision science/advanced green science. 27 February 2017, Shizuoka, Japan (Invited Keynote Speaker)

58. El Enshasy HA, *Bioprocess Industrialization Platform for Microbial Biocontrol Agents: From Strain Isolation to Large Scale Production.* 5th. Asian Plant Growth Promoting Rhizobacteria International Conference for Sustainable Agriculture. 16-19 July 2017, Bogor, Indonesia (Invited Speaker).

59- El Enshasy HA, *Future career for Postgraduate Biotechnology Students: Are you Prepared for?.* 1st. International Postgraduate Symposium in Biotechnology. 21-22 August, Johor Bahru, Malaysia (Invited Plenary Speaker).

59. El Enshasy HA, *Development of Bioprocess Platform for Cordycepin Production by Cordyceps militaris*. AIChE2017 Annual Meeting, 26 Oct.-3 Nov. 2017, Minneapolis, MN, USA (Keynote Speaker).

60. El Enshasy HA, *"Bioprocess Platform Design for Kefiran Production: From Tibet to Tablet*. ACHEMA 2018. 10-15 June, 2018, Frankfurt, Germany (Invited Speaker).

61. El Enshasy HA, *"Bioprocess Platform Design for Industrial Production of Probiotic Yeasts: From Slant to Powder".* The 5th. Asia-Pacific Probiotics Workshop 2018 and the International Conference on Probiotics and Food Sustainability 2018 (ICPFS2018). 23-24 Sep. 2018 Johor Bahru, Johor, Malaysia (Guest Speaker).

62. El Enshasy HA, *"Marine Microbial Biofactories for the Production of Probiotics and Bioactive Compounds: from Strain Isolation to Complete Industrial Platform Design".* The 2nd. International Conference on Integrated Coastal Management and Marine Biotechnology. 23-24 Oct. 2018 Bogor, Indonesia. (Invited Keynote Speaker)

63. El Enshasy HA. *"Bioprocess Platform Design for High Cell Density Cultivation for Probiotic Yeast Production in Semi-Industrial Scale".* AIChE2018 Annual Meeting 28 Oct.- 2 Nov., 2018. Pittsburgh, PA, USA.

64. El Enshasy HA "Bioprocess Platform Design for Lignocellulosic enzymes production in Biorefinery". The 4th. International BioRefine Workshop. 13-14 Dec., 2018. Chulalongkorn University, Bangkok, Thailand (Inivited Keynote Speaker)

65. El Enshasy HA. Bioprocess for biorefinery enzymes production in semi-industrial scale: From soil isolate to bulk powder. The 6th. International Biotechnology Symposium 10-11 July, 2019. Kota Kinabalu, Malaysia (Invited plenary speaker)

66. El Enshsy HA.Biorefinery and Green Chemistry. BioAfrica 2019, 26-28 August, 2019, Durban, South Africa (Invited keynote speaker, Panel member).

67. El Enshasy, HA. Biofactories for production of high value products using biomass as feedstocks. Revolutionizaing the next generation facility in speciality chemicals: Trends, development, and best practive. Exyte Exchange Seminar, 19 Sep. 2019, Johor Bahru, Malaysia (Invited Keynote speaker, Panel member).

68. El Enshasy, HA. Management of research institute: Research performance and financial sustainability. Second International Seminar in Management of Research. 23. Sep., 2019. UTM, Johor Bahru, Malaysia (Invited Keynote Speaker, Panel Member)

69. El Enshasy, HA. Development of Techno-Industrial Platform for Biotechnology Based Products: from Cell Bank to Large Scale production. The 14th. Conference of Applied Microbiology "Microbiology and Sustainable Development". 18-22 Nov., 2019, Cairo, Egypt (Invited Plenary Speaker).

70. El Enshasy, HA. Techno-Industrial Platform Development for Probiotics: From Slant to Bulk Powder. The 3rd. International Food Science, Probiotics, Nutrition & Microbiome Conference. 28-29 Nov., 2019 Kuala Lumpur, Malaysia. (Invited Keynote Speaker)

71. El Enshasy, HA. Bioprocess Platform Design for Large Scale Production of Bioactive Molecules from Mushrooms. The 3rd. International Conference on functional Materials and Chemical Engineering. 15-17 Dec. 2019, Chulalongkorn University, Bangkok, Thailand (Invited Keynote Speaker).

72. El Enshasy HA. The Impact of COVID-19 on Socio-Economy, and Food Security: Challenges and Opportunities. Recent Trends in Applied Sciences: Challenges & Opportunities due to COVID-19 (Two days International Webinar). 17-18 June 2020, Mohammad Ali Jauhar University, Rampur, India. (Guest Speaker).

73. El Enshasy, HA. The Impact of COVID-19 and Climate Change on Food Security in 2020 and Beyond. In. Climate Change-Risks and Impact on Vulnerable Communities Post COVID-19. 8 July 2020, National Research Center, Dokki, Cairo, Egypt (Keynote Speaker).

74. El Enshasy HA. Techno-Industrial Platform Development for Production of Probiotics: From Cell Bank to Bulk Powder. The 2nd. Science and Mathematics International Conference (SMIC) 2020, 8-9 August, Jakarta, Indonesia (Keynote Speaker).

75. El Enshasy HA. Mushroom Platform Technology: From Farm to Pharma. JAMS Join Academic Microbiology Seminar (Minima Maxima Suit), 13 August, Kuala Lumpur, Malaysia. (Invited Speaker)

76. El Enshasy HA. Biological Control of Fungal Oill Palm Diseases in Malaysia: A Sustainable and Safe Solution. International E-Conference on Recent Advances in Agriculture & Environment for Improvement of Agricultural Sustainability. 27-29 Augusut, Sage University, Bhopal, Madhya Pradesh, India. (Keynote Speaker)

77. El Enshasy HA. Probiotics: The small biofactories in our body: Science and Business. The 4th. International Congress on Advances in Bioscience and Biotechnology (ICABB), Sep. 30, 2020. Sarajevo, Bosnia & Herzogovina (Keynote Speaker)

78. El Enshasy HA. *"Development of a Sustainable Bioprocess Platform Technology for Biomass Improvement of Biotherapeutic Strain Lactobacillus reuteri".* AIChE2020 Annual Meeting 13-18 Nov., 2020. San Francisco, CA, USA. (Invited Speaker)

79. El Enshasy HA. *"Development of Probiotics Based products in Feed and Food Industries".* 2nd. International Conference on Microbiota & Microbiome in Health & Disease. 26-27 Nov., 2020. Cairo, Egypt (Invited Speaker)

80. El Enshasy HA. *"Impact of Climate Change and Pandemic Diseases on Food Security (Availability, Affordability, and Accessibility): Challenges and Opportunities".* Challenge of Reducing Food Loss and Waste to Improve Food Security in the Global South (Virtual). 30 Nov., 2020, Pakistan (Invited speaker and panelist).

81. El Enshasy HA. *"Development of probiotic based products: Science, Technology, and Business".* 7th. Asian-Pacific Probiotics Workshop (Virtual). 8 Dec. 2020., Australia (Invited speaker).

82. El Enshasy HA. *"Bioactive molecules from medicinal mushrooms: Application and industrial production".* American Society of Microbiology Seminar (ASM). 12 Dec. 2020, UTHM, Johor, Malaysia (Invited speaker).

83. El Enshasy HA. *"Bioprocess Development for Gluconic acid production using free and immobilized cells of recombinant Aspergillus niger*". 6th. International Conference on Chemical Engineering ICChE2020, 19-22 Dec. 2020; Buet, Dhaka-Bangladesh, (Keynote Speaker).

84. El Enshasy HA. *"Mushroom biofactories for bioactive ingredients production of high medicinal value".* International webinar on Current Trends in Advanced Biomedical Technology. 23-24 Feb., 2021. Tamil Nadu, India (Keynote Speaker).

85. El Enshasy HA. *"Impact of COVID-19 on Socioeconomy of Food Security: From Shock to Adaptation"* The 2nd. International Conference: COVID-19 Pandemic Rearranges the Scientific Research Priorities. 27 Feb. 2021. Mutah University, Jordan. (Keynote Speaker).

86. El Enshasy HA. *"Platform Technology for Large Scale Production of Biological Control Agents for Fungal Oil Palm Diseases".* National e-Conference on Plant Health

and Food Security: Challenges and Opportunities, Plant Phytopathology Society of India. 15-17 March, 2021. New Delhi, India. (Keynote Speaker).

87. El Enshasy HA. *"Killer yeast: A new generation of biological control agents and their applications in post harvest technology".* National Symposium on Fruits. MRDI, Malaysian Agricutlure Research Institute. 6-9 April, 2021. Kuala Lumpur, Malaysia (Invited Speaker).

88. El Enshasy HA. *"Fungal Biopellet Engineering: A Challenge in Bioprocess Industries for Bioproduct Development".* The 7th. International Biotechnology Symposium "Biotechnology in Solving Global Issues". Malaysian Society for Biochemistry and Molecular Biology (MSBMB), 19-21 August, 2021. Universiti Malaysia Sabah (UMS), Kota Kinabalu, Sabah, Malaysia (Invited Speaker).

89. El Enshasy HA. *"Bio-Feed: A New Generation of Safe Multifunctional Feed for Animal Health and Wellness".* 6th. International Congress on Advances in Veterinary Science and Technology., 24 August, 2021. Sarajevo, Bosnia and Herzog (Keynote Speaker)

90. El Enshasy HA. *"Industrial Produciton of Nitrogen Fixing Bacteria in High Cell Density Culture: Challenges and Platform Design.* 1st. Indonesian Chapter Asian PGPR International E-Conference. 28-30 August, 2021. Bali, Indonesia (Invited Speaker).

91. El Enshasy HA. *"The Role of Triple-Helix Model in the Development of Industrial RD&I Cycle for Sustainable Growth in Biotechnology Business Sector".* The 2nd. NRC International Conference on Science and Sustainable Development. 22-23 October, 2021. National Research Center, Dokki Cairo, Egypt (Keynote Speaker)

92. El Enhasy HA. *"Biobusiness of Probiotics: the Essential Microbes for Healthy Life".* The 2nd. International Online Pharmaceutical and Medical Sciences Conference (PMS-2). 1-3 November, 2021. Faculty of Pharmacy, Al-Azhar University, Egypt (Keynote Speaker)

93. El Enshasy HA. "*Probiotic World and Human Health".* The 8th. Asia-Pacific Probiotics Symposium. 6 December, 2021. Australia (Virtual). Keynote Speaker.

94. El Enshasy HA. *"Bioprocess Platform Development for the Production of Fungal Immunomodulators for Pharmaceutical and Nutraceutical Industries".* The 13th. International Symposium for Future Technology Creating Human Health and Society. The Key Innovation that Solves Complex Problems. 3-4 February, 2022. Okayama University, Okayama, Japan (Virtual). Invieted Speaker.

11.6. Posters/abstracts

1-Hellmuth, K., El-Enshasy, H., Rinas, U., Joon-Ki Jung and Ruttkowski, E. (1994) Comparison of glucose oxidase production and secretion by wild type and recombinant *Aspergillus niger* . In the 7th. International Congress of Bacteriology and Applied Microbiology, July 3-8, 1994, Prague, Czech Republic.

2-El-Enshasy, H.A.; Farid, M.A. and El-Diwany, A.I. (1995). Oxytetracycline production by free and immobilized cells of *Streptomyces rimosus* in batch and repeated batch cultures. In the international symposium Immobilized cells: Basics and Applications, Nov. 26-29, Noordwijkerhout, The Netherlands.

3-Farid, M.A.; El-Batal, A.I.; El-Diwany, A.I. and El-Enshasy, H.A. (1995) Immobilization of *Corynebacterium glutamicum* on glass wool for glutamic acid production. In the international symposium Immobilized cells: Basics and Applications, Nov. 26-29, Noordwijkerhout, The Netherlands.

4-El-Enshasy, H.; Hellmuth, K. and Rinas, U. (1996) Effect of medium composition on cell growth and extracellular production of glucose oxidase by recombinant *Aspergillus niger*. In the 3rd. European conference on fungal genetics. March 27-30, 1996, Münster, Germany.

5-El-Enshasy, H.; Hellmuth, K.; Deckwer, W.D. and Rinas, U. (1997). Improvement of glucose oxidase production by recombinant *Aspergillus niger* using non-glucose carbon sources. In 15. DECHEMA-Jahrestagung der Biotechnologen, March 4-6, 1997, Münster.

6-El-Enshasy, H.; Hellmuth, K.; Rinas, U. and Deckwer, W.D. (1997). Overproduction of glucose oxidase in high cell density culture of a recombinant *Aspergillus niger.* In the 97th. ASM General Meeting, May 4-8, 1997, Miami, Florida, USA.

7-El-Enshasy, H. and Rinas, U. (1997). Improvement of glucose oxidase production by recombinant *Aspergillus niger* using mixed substrate (xylose/xylan) system. In the 8th. European Congress on Biotechnology, August 17-21, Budapest, Hungary.

8- El-Diwany, A.; Farid, M. and El-Enshasy, H. (1999). Effect of natural inorganic complex material (vermiculite) on the production of oxytetracycline by *Streptomyces rimosus*. 9 th. International Congress of Bacteriology and Applied Microbiology. Aug. 16-20, Sydney, Australia.

9- El-Diwany, A.; El-Enshasy, H.; El-Sayed, E. and El-sheich, O. (2000). Denitrification of industrial wastes by free and immobilized bacteria. In the 5th. International Symposium on Environmental Biotechnology. July 9-13, Kyoto, Japan.

10- Farid, M.A.; El-Enshasy, H.A.; El-Diwanay, A.I. and Noor El-Deen, A.M. (2000). Alcohol production from starch by mixed cultures of *Aspergillus awamori* and immobilized *Saccharomyces cerevisiae* at different agitation speeds. The world Congress in Biotechnology, The 11th. International Biotechnology Symposium and Exhibition. *In* Biotechnology 2000, Berlin .(3-8 Sept. 2000), vol. 4, 275.

11- Beshay, U. and El-Enshasy, H. (2001). Kinetic of α-amylase production by *Bacillus amyloliquefaciens* under different cultivation conditions. Role of Biochemistry in Environment and Agriculture. Feb. 6-8, 2001, Cairo, Egypt.

12- Mohamed, N.A., El-Enshasy, H., El-Gamal,. S., Farid, M. and El-Diwany, A. (2001). Improvement of erythromycin production by *Saccharopolyspora erythraea* through

cultivation medium optimization. Role of Biochemistry in Environment and Agriculture. Feb. 6-8, 2001, Cairo, Egypt.

13- El-Enshasy, H.A. and Yang, S.T. (2002). Effect of shear stress and shear protectant chemicals on the kinetic of hybridoma cell growth. Biotechnology and sustainable development. March 16-20, Alexandria, Egypt.

14- El-Enshasy, H.A. (2002). Kinetic of oxytetracycline production by immobilized *Streptomyces rimosus* in κ-Carrageenan. Biotechnology and sustainable development. March 16-20, Alexandria, Egypt.

15- El-Enshasy, H.A.; El-Shahid, K.Y. and Mohamed, H.M. (2002). Kinetic of Streptomycin production and degradation during batch cultivation of Streptomyces griseus in shake flask and bioreactor. 150th. Annual meeting of Society of General Microbiology. April 8-12, 2002. Warwick, UK.

16- El-Enshasy, H.A.; Esmail, T.A. and El-Demellawy, M.A. (2002). Kinetic of growth of bone marrow derived stem cells under different osmotic stress. The 5th. International meeting of the Tissue Engineering Society International. December, 8-10 Kobe, Japan.

17- Ahmed I. El-Diwany; Mohaed, A. Farid; Nagwa, M. Atwa; Zenat, K. Mohammed and Hesham A. El-Enshasy. (2003). Continuous production of Bacitracin by immobilized cells of *Bacillus licheniformis* in air-lift bioreactor. The 1st. International congress pharmaceutical & drug industries division, National Research Centre, March 24-26. Cairo. Egypt.

18- Einfluss der Pelletmorphologie von *Aspergillus niger* auf Stoffumsatz und Produktbildung. Horn, H.; Cordes, C.; Hille, A.; Kelly, S.; Grimm, L.; Hengstler, J.; Emmler, M.; Hempel, D.C.; El-Enshasy, H. and Rinas, U. (2003). DECHEMA/GVC, Jahrestagung 2003, 16-18 Sept. Mannheim, Germany.

19- El-Enshasy, H. and Yang, S.T. (2003). Kinetics of cell growth and monoclonal antibodies production by hybridoma cells under different shear stress with and without shear protecting agents. The 11th. European Conference of Biotechnology (ECB11). August 24-29. Basel, Switzerland.

20- El-Enshasy, H. and Wagner, R. (2003). Kinetic of cell growth and amino acid metabolism of Human Embryonic Kidney HEK-293 cells grown in serum free medium at different EDTA concentrations. The 11th. European Conference of Biotechnology (ECB11). August 24-29. Basel, Switzerland.

21- El-Enshasy, H.A. Development of New Cultivation Strategy to Improve the Production of Natamycin and to Minimize the Risk of Antibiotic Degradation During Submerged Cultivation of *Streptomyces natalensis*. The World Conference on Magic Bullets. Celebrating Paul Ehrlich´s 150th. Birthday. September 9-11, 2004. Nürnberg, Germany.

22- El Enshasy, H. (2005). Bioprocess development for the production of α-amylase by *Bacillus amyloliquefaciens* in batch and fed-batch cultures. In Biothailand 2005. The 3rd. conference on starch technology, Bangkok, Thailand.

23- EL-Ensahsy, H., Elsayed A., El-Demellawy, M., El Shereef, A. (2008). Successive Sequential adaptation of HeLa S3 Cells to Serum Free Medium. 1st. International Conference on Biotechnology for the Wellness Industry (1st. ICBWI), August 5-6, Kuala Lumpur, Malaysia.

24- Abdel-Fattah, Y.; El Enshasy, H.; Soliman, N. and El Gendi, H. (2008). Bioprocess development for the production of alkaline protease by *Bacillus pseudofirmus* MN6 through statistical experimental designs. International Conference of the International Union of Microbiological Societies (IUMS). 5-9 August, Istanbul, Turkey.

25- Mohy Eldin, M.S.; El Enshasy, H.A.; El Sayed, M.; El Sayed, S.; Haroun, B. and Hassan. E.A. (2009) Covalent immobilization of penicillin G acylase onto chemically activated surface of PVC membranes for 6-APA production from penicillin hydrolysis process. I-optimization of surface modification and its characterization. International conference for enhancing scientific research: innovation&development. 5-7 March, Tanta, Egypt.

26- Awad, M.H.; El-Shahed, K.Y.I. and El Enshasy, H.A. (2009). Enhancement of clavulanic acid production by *Streptomyces* sp. NRC-35 using different additives. 2nd. International Conference on Biotechnology for the Wellness Industry (2nd. ICBWI), July 23-26, Kuala Lumpur, Malaysia.

27- El Enshasy, H.A.; Awad, M.H.; Othman, Z.; Shahabuddin, N.A.; Joharry, S.F.; Sulaiman, H.O.S.; Brandt, A.; Sarmidi, M.R. and Abdul Aziz, R. (2009). Bioprocess development of *Bacillus thuringeiensis* var. *israelensis* mass production for mosquetocide control. 2nd. International Conference on Biotechnology for the Wellness Industry (2nd. ICBWI), July 23-26, Kuala Lumpur, Malaysia.

28- Abd Malek, R.; Hamdan, S.; El Enshasy, H.A.; Othman, Z.; Sarmidi, M.R. and Aziz, R.A. (2009). Optimization of growth medium and controlled pH strategy in bioreactor for high cell density cultivation of probiotic *Lactobacillus salivarius* isolated from mother's milk. 2nd. International Conference on Biotechnology for the Wellness Industry (2nd. ICBWI), July 23-26, Kuala Lumpur, Malaysia.

29. Abd Malek R, Hamdan S, El Enshasy HA, Othman N, Mohamad R, Sarmidi R (2009). Probiotic characterization of *L. salivarius* isolated from mother milk for acid and bile tolerance. 11th. ASEAN Food Conference 2009. Oct. 21-23, Bandar Seri Baegawan. Brunei Darussalam.

29- Zjeh, K.Z.; El Enshasy, H., Othman, N.Z.; Ismail, N.S.; Sarmidi, M.R. and Aziz, R.A. Efficient exopolysaccharide production by *Ganoderman lucidum* in submerged culture. 3rd. International Conference on Biotechnology for the Wellness Industry (3rd. ICBWI) October 8-9, 2010. Kuala Lumpur, Malaysia.

30- Wai Chang, H.; Chee, O.H.; Othman, N.Z.; El Enshasy, H.A.; Wan Mustapha, W.A.; Sarmidi, M.R. and Aziz, R.A. Optimization of a fermentation process for high cell mass production of *Bacillus thuringiensis* subsp. *Israelensis* (BTI). 3rd. International Conference on Biotechnology for the Wellness Industry (3rd. ICBWI) October 8-9, 2010. Kuala Lumpur, Malaysia.

31- Wai Chang, H.; Chee, O.H.; Othman, N.Z.; El Enshasy, H.A.; Wan Mustapha, W.A.; Sarmidi, M.R. and Aziz, R.A. Optimization of *Rhizobium trifolii* high cell mass production in semi-industrial scale. 3rd. International Conference on Biotechnology for the Wellness Industry (3rd. ICBWI) October 8-9, 2010. Kuala Lumpur, Malaysia.

32- Then, C.; Kar Wai, O.; Othman, N.Z.; El Enshasy, H.A.; Wan Mustapha, W.A.; Sarmidi, M.R. and Aziz, R.A. High cell mass production of *Azotobacter vinelandii* for biofertilizer application. 3rd. International Conference on Biotechnology for the Wellness Industry (3rd. ICBWI) October 8-9, 2010. Kuala Lumpur, Malaysia.

33- Chan, Y.S.; El Enshasy, H.; Othman, N.Z.; Abd Malek, R. And Sarmidi, M.R. Bioprocess optimization and functionality characterization of *Lactobacillus plantarum*. 3rd. International Conference on Biotechnology for the Wellness Industry (3rd. ICBWI) October 8-9, 2010. Kuala Lumpur, Malaysia.

34- Abou-Shleib, H.; Omar, H.; El Demellawy, M.; El Sayed, E.; Shahin, H. And El Enshasy, H. Efficient monoclonal antibody production (Anti-CD3) by hybridoma cells in basket spinner using free and immobilized cell systems. 3rd. International Conference on Biotechnology for the Wellness Industry (3rd. ICBWI) October 8-9, 2010. Kuala Lumpur, Malaysia.

35- Chin, T.S.; El Enshasy, H.A.; Abd Malek, R.; Othman, N.Z.; Ramli, S.; Sarmidi, M.R. and Aziz, R.A. Cell mass production of biotherapeutic yeast *Saccharomyces boulardii* in batch and in fed-batch cultivation system. 3rd. International Conference on Biotechnology for the Wellness Industry (3rd. ICBWI) October 8-9, 2010. Kuala Lumpur, Malaysia.

36- Guat, T.C.; El Enshasy, H.A.; Othman, N.Z.; Wan Mustapha, W.A.; Jalal, Y.; El Marzugi, N.; Sarmidi, M.R. and Aziz, R.A. Optimization of medium composition and biochemical engineering parameters for high cell mass production of nitrogen fixing bacteria *Sinorhizobium meliloti* in pilot scale level. 3rd. International Conference on Biotechnology for the Wellness Industry (3rd. ICBWI) October 8-9, 2010. Kuala Lumpur, Malaysia.

37- Abd Malek, R.; El Enshasy, H.A.; Awad, H.M.; Othman, N.Z. and Aziz, R. (2011). Efficient spore production by *Bacillus thuringiensis* var *israelensis* in semi-industrial scale using different cultivation strategies. International Congress of the Malaysian Society for Microbiology. 8-11 December, Penang, Malaysia. (ISBN 978-983-99873-1-7).

39- Awad, H.M.; Malek, M.K.; El Enshasy, H.A.; Malek, R.A.; Sarmidi, M.R. and Abdul Aziz, R. (2011). Optimization of *Bifidobacterium longum* production process for probiotic applications. International postgraduate conference on Biotechnology. 15-18 Dec., Terengganu, Malaysia.

40- Rahaeifard, M.; Then, C.; Wan Mustapha, W.A.; Othman, N.Z.; Sarmidi, M.R.; Aziz, R.A. and El Enshasy, H.A. (2012). Isolation and cell mass production of *Trichoderman harzianum* a new biocontrol agent against oil palm pathogen *Ganoderman boninese*.

International Conference on Biotechnology, Nanotechnology and its applications (ICBNA 2012). 17-18 March., Bangkok, Thailand.

41- Maftoun, P.; Malek, R.A.; Sarmidi, R.; Aziz, R. and El Enshasy, H. (2012). Change in biopellet morphology during submerged cultivation of *Pleurotus ostreatus* in shake flask. International Conference on Biotechnology, Nanotechnology and its applications (ICBNA 2012). 17-18 March., Bangkok, Thailand.

42- Maftoun, P.; Malek, R.; Sarmidi, M.R.; Aziz, R.A. and El Enshasy, H. (2012). Effect of aeration rate on the kinetics of cell growth and expolysaccharide production by *Pleurotus ostreatus* in semi-industrial scale. Plenary Scientific Research Centre Conference (PSRC), 24-25 March, 2012, Dubai, UAE.

43- Maftoun, P,; Malek, R.; Sarmidi, M.R.; Aziz, R.A. and El Enshasy, H. A. (2012). Production of immunomodulator exopolysaccharide in semi-industrial scale by *Pleurotus ostreatus.* Plenary Scientific Research Centre Conference (PSRC), 24-25 March, 2012, Dubai, UAE.

44. Sheikh, S.I, Ngadiran, S., Aman Nor, N.F.; Musa, N.F. and El Enshasy, H.A. Development of bio-repellent using *citronella vinegar* and triglycerides from commercial application. The 4$^{th.}$ International Conference on Biotechnology for the Wellness Industry (4$^{th.}$ ICBWI) June 20-21, 2012. Kuala Lumpur, Malaysia.

45. Malek, R.A.; Jalal, Y.; Othman, N.Z.; Sarmidi, M.R.; Aziz, R. and El Enshasy, H.A. Probiotic isolated from breast milk: semi-industrial production of *Lactobacillus salivarius* WICC B08 and functional characterization as infant formula. The 4$^{th.}$ International Conference on Biotechnology for the Wellness Industry (4$^{th.}$ ICBWI) June 20-21, 2012. Kuala Lumpur, Malaysia.

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Appendix III. (Supervision)

Ph.D. Thesis

1- Optimization of β-glucanase production by free and immobilized cells
(Dr. Sawsan Abdel Ghani, Faculty of Science, Cairo University)

2- Production of Erythomycin by *Saccharopolyspora erythrea* by using different production techniques. (Dr. Naiira Ahmed Mohamed, Faculty of Science, Cairo University)

3- Physiological and biochemical studies for clavulanic acid production
(Dr. Hassan Mohamed Mohamed, Faculty of Agriculture, Cairo University)

4- Production of Vitamin B_{12} by methanol utilizing strain *Rubrobacter motiliticus*).
(Dr. Tamer El Kelani, Faculty of Science, Al Azhar University)

5- Studies on the stability of phytase gene (PhyA) in *Escherichia coli* with high stability and high level gene expression during scaling up study in the bioreactor.
(Ms. Nor Zalina bt. Othman, Faculty of Chemical Engineering, Universiti Teknologi Malaysia)

6- Development of industrial process for large scale production of kefiran. (Mr. Mohamed Daniel, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia).

7- Efficient large scale production of thermostable xylanase using recombinant *Escherichia coli*.
(Mr. Subeesh Kunhi Kandiyll, Faculty of Chemical Engineering, Universiti Teknologi Malaysia)

8- Scaling up of simultaneous saccharification and fermentation of microwave alkali pretreated empty fruit bunch for lactic acid production.
(Ms. Nursia Binti Hassan)- Faculty of Chemical Engineering, Universiti Teknologi Malaysia)

9- Development of new approach for novel antibiotic discovery from extreme environment. (Mr. Ali Zineddine Boumehira, University of Science and Technology, Houari Boumedeine, Algeria).

10- Bioprocess design for efficient immunomodulator polysaccharide production by the medicinal mushroom *Cordyceps* in semi-industrial scale. (Mr. Mohamed Soltani, Faculty of Chemical Engineering, Universiti Teknologi Malaysia)-

11- Bioprocess development for efficient lignen degrading enzyme production for industrial applications. (Ms. Zulaiha Hanapi), Faculty of Chemical Engineering, Universiti Teknologi Malaysia).

12- Improving functional properties of *Punica granatum* juice by probiotification using *Lactobacillus* species. (Ms. Siti Marhaida Bt Mustafa), School of Chemical and Energy Engineering, Faculty of Engineering, Universiti Teknologi Malaysia.

13- Development of industrial platform for the *Lactobacillus reuteri*: A probiotic against *Helicobacter* infection. (Ms. Mahshid Heidarrezaei, Faculty of Chemical Engineering, Universiti Teknologi Malaysia)

14- Development of improved process of high sporulation and high cell density cultivation of *Bacillus thuringiensis*.(Mr. Yousry Al Azaly, Ain Shams university), in progress

15- Bioprocess optimization for high biomass production of probiotic strain *Lactobacillus reuteri*. (Mr. Shanmuga Kumar, Faculty of Chemical and Energy Engineering, Universiti Teknologi Malaysia), in progress

16- Bioprocess optimization of novel antibiotics from lactic acid bacteria (Ms. Vasanthamalar A/P Sabanayagam, Faculty of Chemical and Energy Engineering, Universit Teknologi Malaysia), in progress

M.Sc. Thesis

1- Biochemical and microbiological studies on the production of natamycin using *Streptomyces natalensis* (Internal supervisor in NRC).
(Dr. El Sayed Ahmed El Sayed, Faculty of Science, Cairo University, Egypt).

2- Production of alcohol using mixed immobilized culture system
(Mrs. Azza M. Noor El deen, Faculty of Science, Cairo University, Egypt).

3- Optimization of rifamycin production by *Amycolatopsis mediteranei* in free and immobilized form (Mrs. Rabab Abu El Magd, Faculty of Pharmacy, Alexandria University, Egypt).

4- Studies on rifamycins production by *Amycolatopsis mediterranei*
(Mr. Ehab Ammar, Faculty of Science, Monufia University, Egypt).

5- Production of streptomycin by *Streptomycis hygroscopicus* (Dr. Hassan M. Mohammed, Faculty of Agriculture, Cairo University, Egypt).

6- Optimization of the production process of cyclosporine A
(Mrs. Rania abou Zahra, Faculty of Pharmacy, Alexandria University, Egypt).

7- Alcohol production by thermophilic yeast strain of *Saccharomyces cerevisiae*
(Mr. Ahmed Azazi, Faculty of Science, Al Azhar University, Egypt).

8- Optimization of penicillin acylase production by *Escherichia coli* and enzyme immobilization in different carrier (Mr. Mohamed El Sayed, Faculty of Science, Al Azhar University, Egypt).

9- Kinetics of cell growth of HeLa-3 cells and its adaptation to serum free medium (Mr. Abdalla Adel, Faculty of Science, Mansoura University, Egypt).

10- Optimization of monoclonal antibody (Anti CD-3) production using hybridoma cells adapted to serum free medium
(Mrs. Hasnaa Rabei, Faculty of Pharmacy, Alexandria University, Egypt).

11- Optimization of growth media and functionality characterization of probiotic *Lactobacillus salivarius*.
(Ms. Roslinda bt Abd Malek, Faculty of Bioscience, Universiti Teknologi Malaysia, Malaysia).

12- Maximize Kefiran production by *Lactobacillus kefiranofaceins* through medium optimization and production parameter optimization
(Mr. Mohamed Daniel, Faculty of Chemical Engineering, Universiti Teknology Malaysia, Malaysia).

13- Semi-industrial production of *Cinnorhizobial* cell mass for biofertilizer application
(Mrs. Teoh Kat, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia)

14- Production of probiotic yeast *Saccharomyces boulardii* and its application for the treatment of microbial and non-microbial diseases
(Mrs. Doaa Rashid, Faculty of Science, Alexandria University, Egypt).

15- Optimization of cultivation medium and cultivation conditions for high cell density cultivation of *Azotobacter vinelandii*.
(Mr. Charles Then, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia).

16- Optimization for the production of kefiran using *Lactobacillus kefiranofaceins* in a bioreactor. (Mr. Daniel Joe Dailin, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia).

17- Efficient exopolysaccharide production by *Pleurotus ostreatus* in submerged culture. (Ms. Parisa Maftoun, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia)

18- Efficient cultivation of *Kluyveromyces lactis* in high cell density culture in fed-batch cultivation system. (Mr. Mohd. Sahfiq B. Mohd Sueb, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia)

19- High cell density cultivation of *Rhizobium trifolii* for biofertilizer application. (Mr. H'ng Wei Chang, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia)

20- Bioprocess optimization of cell mass production of *Trichoderma* for agriculture application. (Ms. Mastooreh Rahaeifard, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia).

21- Medium optimization for high erythromycin production by *Saccharopolyspora erythraea* using response surface methodology. (Mr. Mohamed Ali Mohamed, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia).

22- High cell density cultivation of *Hendersonia* sp. for the application of biological control of oil palm disease. (Muhammad Danial bin Azman, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia).

23- Optimziation of probiotic bacteria *Bifidobacterium longum* for high yield biomass production for probiotic application (Mr. Muhammad Khairuddin bin Malek, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia)

24- Optimization of pleuran production by *Pleurotus ostreatus* using different cultivation strategies. (Mr. Mohd Hemi Johari Masri, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia)

25- Optimization of cultivation medium for levan production using *Bacillus subtilis* in semi-industrial scale.(Ms. Khairedza Rahmi binti A. Hamid, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia).

27- Studies on the effects of different bioprocess parameters on pectinase production by *Aspergillus niger.* (Ms. Noorhamizah binti Suhaimi, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia).

28- Production of selenium enriched *Saccharomyces boulardii* in pilot scale bioreactor. (Mr. Amir Fuhaira B. Ishak, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia).

29- Bioprocess optimization for high biomass production of *Bacillus firmus.* (Mr. Surendran Sukumaran, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia).

30- Optimization of medium and cultivation conditions for D-lactic acid production using cassava starch. (Mr. Ramzi ata Abd Alsaheb, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia).

31- Bioprocess development for high cell mass production and crystal formation of *Bacillus thuringiensis* in semi industrial scale. (Ms. Naqquyu Baz , Faculty of Chemical Engineering, Universiti Teknologi Malaysia, Malaysia).

32- Bioprocess optimization of biomass production of *Lactobacillus acidophilus* (Ms. Afif Najihah binti Kepli, School of Chemical and Energy Engineering, Universiti Teknologi Malaysia, Malaysia)

33- Optimization of bioprocess for biomass production of *Lactobacillus casei* (Ms. Jennifer Edwina A/P Eyahmalay, School of Chemical and Energy Engineering, Universiti Teknologi Malaysia, Malaysia)

34- Bioprocess optimization for high cell mass production of the probiotic strain *Lactobacillus lactis* subspecies *cremoris*. (Mr. Ramesh, School of Chemical and Energy Engineering, Universiti Teknologi Malaysia, Malaysia)

35- Medium optimization of biomass production of *Lactobacillus fermentum* in semi-industrial scale. (Mr. Puvaniswaran A/L Krishna Moorthi, School of Chemical and Energy Engineering, Universiti Teknologi Malaysia, Malaysia)

36- Bioprocess optimization for high biomass and spores production of *Bacillus amyloliquefaciens.* (Mr. Osama Abdel Hadi, School of Chemical and Energy Engineering, Faculty of Engineering, Universiti Teknologi Malaysia, Malaysia).

37- Bioprocess optimization for biomass production of the probiotic yeast *Kluyveromyces lactis* (Ms. Aelia Insyeera binti Mohd Hishamuddin, School of Chemical and Energy Engineering, Universiti Teknologi Malaysia, Malaysia)- in progress.

38- Strain isolation and bioprocess optimization of high xylanase producer strain *Trichoderma* sp. (Mr. Kugan Kumar Ambehabati, School of Chemical and Energy Engineering, Universiti Teknologi Malaysia, Malaysia), in progress.

39- Development of efficient process for high polysaccharides production by *Pleurotus ostreatus* (Mr. Solleh Ramli, School of Chemical and Energy Engineering, Universiti Teknologi Malaysia, Malaysia), in progress.

40- Medium optimization and bioprocess design for efficient riboflavin production using *Ashbiya sp.* (Ms. Nivashini A/P Neela Mekan, School of Chemical and Energy Engineering, Universiti Teknologi Malaysia, Malaysia), in progress.

41- Bioprocess optimization for pullulan production in semi-industrial scale (Ms. Luo Zaini binti Mohd Izwan Low, School of Chemical and Energy Engineering, Universiti Teknologi Malaysia, Malaysia), in progress.

42- Isolation, identification and biomass production of nitrogen removing bacteria for waste water treatment applications (Ms. Nurul Zahidah binti Nordin, School of Chemical and Energy Engineering, Universiti Teknologi Malaysia, Malaysia), in progress.

43- Isolation and identification of functional microbes from rice microbiome and rhizosphere (Ms. Li Ting, School of Chemical and Energy Engineering, Universiti Teknologi Malaysia, Malaysia), in progress.