

# CURRICULUM VITAE

## CONTACT DETAILS

### Dr. Esam Hummadi

Assistant Professor  
Department of Biology  
College of Science  
University of Diyala  
Diyala Province, Iraq.  
Phone: +964 7713553577  
Email: [esam\\_hummadi@uodiyala.edu.iq](mailto:esam_hummadi@uodiyala.edu.iq)  
[hummadi.eh@gmail.com](mailto:hummadi.eh@gmail.com)

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## RESEARCH PROFILES:

### SCOPUS PROFILE

<https://www.scopus.com/authid/detail.uri?authorId=57205514780>

### GOOGLE SCHOLAR PROFILE

<https://scholar.google.co.uk/citations?user=JYUYTGMAAAAJ&hl=en&authuser=1>

### RESEARCHGATE PROFILE

[https://www.researchgate.net/profile/Esam-Hummadi?ev=hdr\\_xprf](https://www.researchgate.net/profile/Esam-Hummadi?ev=hdr_xprf)

### ORCID PROFILE

<https://orcid.org/0000-0003-2827-1294>

### LINKEDIN PROFILE

<https://www.linkedin.com/in/dr-esam-hummadi-95209aa5/>

## AREA OF SPECIALIZATION

Studies the potential of organisms, fungi, bacteria, plants to provide useful metabolites, biomass and bioremediation and act as agents for biotechnological applications.

**Keywords:** Environmental Biotechnology, Biocontrol, Bioprospecting Natural Products, Antimicrobial Agents.

## TECHNICAL SKILLS

- Production and purification of bioactive compounds.
- Bioassays of bioactive metabolites.
- Handling of Nucleic acids.
- Handling of enzymes.
- Molecular Biology techniques.

## EDUCATION

Ph.D., Biotechnology (2018)

Swansea University, UK

*Thesis: "Bioactive Volatile and Secretory Metabolites of the Entomopathogenic Fungus Metarhizium".*

M.Sc. Biotechnology (2003)

University of Baghdad, Iraq

*Dissertation: "Biochemical Study on Streptodornase Produced from Streptococcus pyogenes".*

B.Sc., Plant Protection (1994)

University of Baghdad, Iraq

## **ADMINISTRATIVE RESPONSIBILITIES**

Position: Head of Department of Biology

Period: 6/2/2007 to 14/2/2010

Institution: University of Diyala, College of Science

Position: Assistant Head of Department of Biology

Period: 29/9/2007 to 2/11/2011

Institution: University of Diyala, College of Science

Position: Head of Department of Biotechnology

Period: 26/12/2018 to 31/3/2022

Institution: University of Diyala, College of Science

Position: Head of Department of Biology

Period: 4/7/2023 - present

Institution: University of Diyala, College of Science

## **ACADEMIC POSITIONS**

Position: Associate Professor

Period: 13/6/2021-present

Institution: University of Diyala, College of Science

Position: Lecturer

Period: 2011-2021

Institution: University of Diyala, College of Science

Position: Assistant Lecturer

Period: 2006-2011

Institution: University of Diyala, College of Science

## **SELECTED SCIENTIFIC AND ADMINISTRATIVE COMMITTEES**

2018-2022 Chairman of Examinations and Assessments Committee, Department of Biotechnology, College of Science, University of Diyala.

2020 Chairman of Human Right Committee, College of Science, University of Diyala.

2020-2021 Chairman of Quality Assurance, College of Science, University of Diyala.

2022 Chairman of the Strategic Planning Committee (2021-2026), Department of Biotechnology, College of Science, University of Diyala.

- 2022 Chairman of Laboratory Quality Assurance Committee
- 2020 Member of Central Examinations Committee, College of Science, University of Diyala.
- 2022 Member of Scientific Committee, Department of Biotechnology, College of Science, University of Diyala.
- 2020 Member of CBRN Committee, College of Science, University of Diyala.
- 2022 Member of the Biotechnology Curriculum Committee, Ministry of Higher Education and Scientific Research, Iraq.
- 2021 Member of Study of Health and Environmental Situation Committee in Diyala Province, Iraq.
- 2021 Member of Biosafety and Risk Assessment Guidance Catalog Committee, College of Science, University of Diyala.
- 2021 Member of The eLearning Management Committee, College of Science, University of Diyala.
- 2021 Member of the Central Civil Defense Committee, College of Science, University of Diyala.
- 2020-2022 Coordinator of Student Advisory Committee, College of Science, University of Diyala.
- 2021 Member of Conference Organizing Committee of the International Conference, College of Science, University of Diyala.
- 2021 Member of Two Master's Thesis Examination Committees, College of Science, University of Diyala.
- 2021 Member of Master's Thesis Examination Committee, College of Education for Pure Science, University of Diyala.
- 2022 Member of Three Master's Thesis Examination Committees, College of Science, University of Diyala.
- 2022 Member of Master's Thesis Examination Committee, College of Education for Pure Science, University of Diyala.

#### **TEACHING EXPERIENCE (UNDERGRADUATE COURSES TAUGHT)**

Subject	Class	Semester	Period
Principles of Biotechnology	First	First	2006-2011 and 2018-present
Environmental Biotechnology	Second	Second	2018-present
Antibiotics	Third	Second	2018-2020
Enzymology	Fourth	First	2006-2012
Practical Molecular Biology	Third	First	2006-2012
Practical Microbial Genetic	Third	Second	2006-2012
Research Methodology	MSc	First	2023-2025
Bioseparation	PhD	Second	2023-2025

#### **SUPERVISION OF MSc. STUDENTS**

- 2021 Molecular identification of *Pseudomonas aeruginosa* using multiple locus variable number of tandem repeat units.
- 2022 Effect of *Lactobacillus* spp. bacteria on expression of pyocyanin genes in *Pseudomonas aeruginosa* isolated from clinical sources.
- 2022 Synthesis and Evaluation of Biological Activity of some New Compounds Derived from Hydrazon Amide.
- 2025 The inhibitory effect of *Lactobacillus* spp. extract against some virulence factors in clinical *Staphylococcus aureus*.

## **SUPERVISION OF BSc. STUDENTS**

- 2021 Isolation of Bacteria for Removal of Congo Red Dye from Water.
- 2020 Vaccine Production: Covid-19 Vaccine as an Example.
- 2019 Evaluation of Waste Agricultural Biomass for Adsorption of Different Types of Oils.
- 2018 Detection of Antibacterial Activity in Mycelia of *Rhizopus stolonifer*
- 2012 Culture Media Optimization of Nuclease Production from *Staphylococcus* spp. EH69.
- 2011 Isolation of Nuclease from *Staphylococcus* spp. EH69.
- 2010 Study Some Condition for  $\alpha$ -amylase from *Bacillus* sp.
- 2009 Effect of Plant Extract of *Eucalyptus* Against Pathogenic Bacteria.

## **INTERNATIONAL COLLABORATIONS**

Professor Tariq Butt

### **Name of the research group:**

Biocontrol and Natural Products Research Group (BANP), Swansea University, UK.

## **AWARDS**

- 2021 The University Academic Staff Award, College of Science, University of Diyala.
- 2022 Best Research Paper Award, University of Diyala.

## **ACADEMIC JOURNAL REVIEWING**

- Process Safety and Environmental Protection/Elsevier
- Heliyon/ Elsevier
- Phytochemical Analysis/John Wiley and Sons Ltd.
- International Journal of Energy Research/John Wiley and Sons Ltd.
- Waste and Biomass Valorization/Springer
- Bulletin of Environmental Contamination and Toxicology/Springer
- Biomass Conversion and Biorefinery/Springer
- catalysts/MDPI
- molecules/MDPI
- sustainability/MDPI
- Journal of Environmental Science and Health, Part B/Taylor & Francis
- Journal of Visualized Experiments/MYJoVE Corporation
- Academic Science Journal, College of Science, University of Diyala

## **PROFESSIONAL AFFILIATIONS**

Member of:

- 2015 Royal Society of Biology (UK)
- 2017 The British Mycological Society (UK)
- 2022 American Society for Microbiology
- 2018 Iraqi Academics Syndicate
- 2019 The Biological Society of Iraq

## **PATENTS**

- 2021 Butt, Tariq, and **Esam Hummadi**. "Use of Volatile Organic Compounds as Pesticides." U.S. Patent Application No. 17/042,541.
- 2025 Mustafa Hameed, . . . and **Esam Hummadi**. "New method for preparation of active nano-tetracycline against *Pseudomonas aeruginosa* and *Staphylococcus aureus* MLD" Iraq. Patent Application No. IQ/00230269.

## PUBLICATIONS

- 1) AE Ali, A. E., Al-Taai H. R., **Hummadi, E. H.** (2022). Molecular Typing of *Pseudomonas aeruginosa* by Multilocus Variable-Number Tandem Repeat Analysis. *Biochemical and Cellular Archives*, 22 (2) 3449-3454.
- 2) Ahmed, M. J., Hameed, B. H., & **Hummadi, E. H.** (2020). Review on recent progress in chitosan/chitin-carbonaceous material composites for the adsorption of water pollutants. *Carbohydrate Polymers*, 116690.
- 3) Ahmed, M. J., Hameed, B. H., & **Hummadi, E. H.** (2021). Insight into the chemically modified crop straw adsorbents for the enhanced removal of water contaminants: A review. *Journal of Molecular Liquids*, 115616.
- 4) Ahmed, M. J., Okoye, P. U., **Hummadi, E. H.**, & Hameed, B. H. (2019). High-performance porous biochar from the pyrolysis of natural and renewable seaweed (*Gelidiella acerosa*) and its application for the adsorption of methylene blue. *Bioresource technology*.
- 5) Al-Khalidy, S. H. H., Abdilhameed A. M. and **Hummadi E. H.** (2013). Detection the Optimum Conditions for Alginase Production by *Bacillus* sp. Isolated from Soil. *Al-Mustansiriyah Journal of Science*. Vol. 24, issue 1, p: 19-28.
- 6) Al-Tamimi, A., **Hummadi, E.**, & Hammadi, M. (2019). Antibacterial activity of ZnO and CO<sub>3</sub>O<sub>4</sub> nanoparticles synthesized by co-precipitation method. *Biochem. Cell. Arch.*, 19(2), 3489-3494.
- 7) Anastopoulos, I., Ahmed, M. J., & **Hummadi, E. H.** (2022). Eucalyptus-based materials as adsorbents of heavy metals and dyes pollutants from (waste) waters. *Journal of Molecular Liquids*, 118864.
- 8) Gatie I. H., Al-Taai H. R. R. and **Hummadi E. H.** (2010). Isolation of Formaldehyde Resistant Bacteria from Different Environmental Samples. *Diyala Journal for Pure Sciences*. Vol.7, No. 4.
- 9) Hameed, I. A., Habeeb, A. A., Al-Zanganawee, J., & **Hummadi, E. H.** (2020). Effect of Colloidal Gold Nanoparticles Preparation Conditions on Viability of MCF-7 Breast Cancer Cells. *Diyala Journal for Pure Science*, 16(04).
- 10) Hammadi, M. **Hummadi, E. H.** Sabah, R. (2022). Synthesis of Cus Nanoparticle and Characterization, as well as Investigation of their Anticancer Activity Against a Human Breast Cancer Cell Line. *Journal of Pharmaceutical Negative Results*, 13(2), 76-81.
- 11) **Hummadi, E. H.** (2011). Isolation of Nuclease from *Staphylococcus* sp. EH69 *Diyala Journal for Pure Sciences*. Vol.8, No.1, p: 11-25.
- 12) **Hummadi, E. H.**, Cetin, Y., Demirbek, M., Kardar, N. M., Khan, S., Coates, C. J., ... & Butt, T. M. (2022). Antimicrobial Volatiles of the Insect Pathogen *Metarhizium brunneum*. *Journal of Fungi*, 8(4), 326.
- 13) **Hummadi, E. H.**, Dearden, A., Generalovic, T., Clunie, B., Harrott, A., Cetin, Y., ... & Butt, T. (2020). Volatile Organic Compounds of *Metarhizium brunneum* Influence the efficacy of Entomopathogenic Nematodes in Insect Control. *Biological Control*, 104527.
- 14) Kasoob, D. S., & **Hummadi, E. H.** (2022). Expression of *rhlR* gene in *Pseudomonas aeruginosa* affected by *Lactobacillus* spp. *Journal of Pharmaceutical Negative Results*, 13(3), 508-512.
- 15) Kassob, D. S., & **Hummadi, E. H.** (2023). Study of pyocyanin production and biofilm formation in clinical *Pseudomonas aeruginosa*. *Academic Science Journal*, 1(2), 139-152.
- 16) Khanday, W. A., Ahmed, M. J., Okoye, P. U., & **Hummadi, E. H.** (2025). Single-step H<sub>3</sub>PO<sub>4</sub> activation of chitosan for efficient adsorption of amoxicillin and doxycycline antibiotic pollutants. *Inorganic Chemistry Communications*, 175, 114189.

- 17) Khanday, W. A., Ahmed, M. J., Okoye, P. U., **Hummadi, E. H.**, & Hameed, B. H. (2019). Single-step pyrolysis of phosphoric acid-activated chitin for efficient adsorption of cephalixin antibiotic. *Bioresource Technology*.
- 18) Khanday, W. A., Soon, K. A., Ahmed, M. J., & **Hummadi, E. H.** (2025). Cross-linked chitosan/pencil clay hybrid beads for the adsorption of reactive black 5. *International Journal of Biological Macromolecules*, 285, 138301.
- 19) Mahmood, M. M.; Khudhaier M. K. and **Hummadi, E. H.** (2010). A drug sensitivity of bacteria isolated from otitis media patients and a study of transmission agents of the disease in Diyala government. *Journal of Research Diyala Humanity*. Vol. 42, p: 304-313.
- 20) Marrakchi, F., Hameed, B. H., & **Hummadi, E. H.** (2020). Mesoporous biohybrid epichlorohydrin crosslinked chitosan/carbon–clay adsorbent for effective cationic and anionic dyes adsorption. *International Journal of Biological Macromolecules*, 163, 1079-1086.
- 21) Salah, M, Hammadi, M., **Hummadi, E. H.** (2021). Anticancer Activity and Cytotoxicity of ZnS Nanoparticles on Mcf-7 Human Breast Cancer Cells. *Biochemical and Cellular Archives*, 21(1), 95-99.
- 22) Tan, Y. L., Ahmed, M. J., **Hummadi, E. H.**, & Hameed, B. H. (2019). Kinetics of Pyrolysis of Durian (*Durio zibethinus* L.) Shell Using Thermogravimetric Analysis. *Journal of Physical Science*, 30.