MUATASEM LATIF ALI is a Ph.D. candidate at Örebro University, researching the metabolic and resistance mechanisms of *Pseudomonas oleovorans* and biocides found in construction materials He holds a Master of Science in Environmental Risk Analysis from Linnaeus University, Sweden, and a Bachelor of Science in Chemical Engineering from Baghdad University, Iraq. In his Ph.D. studies, Muatasem specializes in the resistance mechanisms of *P. oleovorans* strains, particularly focusing on the industrially significant P4A isolate. His dissertation offers a comprehensive analysis of the unique characteristics of *P. oleovorans* P4A, demonstrating its superior resistance and tolerance to standard biocides used in preserving coating materials, in contrast to the reference strain 1045.

With a career spanning over two decades, Muatasem has made significant contributions to the growth and success of various organizations. His role as an R&D Product & Process Development Engineer at Saint-Gobain/Scanspac involved overseeing the formulation and scaling up of developmental products, optimizing formulations, contributing to process excellence, and supporting the production department.

His research sheds light on the morphological, cultural, biochemical, and metabolic traits of *P. oleovorans* P4A, highlighting the diversity among bacterial strains in industrial settings. His examination of the minimum inhibitory concentration (MIC) for specific biocides has revealed the remarkable tolerance of *P. oleovorans* P4A, especially against biocides such as BIT and CMIT. His research includes whole genome sequencing (WGS) to decipher the biocide resistance mechanisms in *P. oleovorans* strains P4A and 1045. Despite challenges in identifying specific resistance genes or mutations that are not present in current databases, his research has uncovered substantial genomic differences that suggest potential genetic factors contributing to antimicrobial resistance. Muatasem's work also emphasizes the importance of Serine/Threonine protein kinases in the bacterial response to environmental changes and adaptation to biocide exposure. Genetic mutations in these kinases affect bacterial survival and metabolic pathways. His thorough investigation into the metabolic profiles of the two *P. oleovorans* strains has provided significant insights into the effects of biocide exposure on bacterial metabolism. Muatasem's research highlights specific metabolic changes, such as variations in tetradecenoic acid, 5-Hydroxyindole-3-acetic acid (5-HIAA), and amino acids, illustrating the complex bacterial response to biocide exposure. Pathway analysis has revealed significant modifications in essential pathways related to stress response, energy generation, and protein synthesis, with a special focus on peptidoglycan biosynthesis in the biocide-resistant strain P4A. His efforts improve our knowledge in this important area of science.

ISSN 1651-4270
ISBN 978-91-7529-613-5

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2025

Doctoral Dissertation

ÖREBRO UNIVERSITY

Metabolic and Resistance Mechanisms of *Pseudomonas oleovorans* to Biocides in Construction Materials and Industrial Products

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Chemistry

Örebro Studies in Chemistry 33 | ÖREBRO 2025

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