NOWE TEMATY PRAC DYPLOMOWYCH

planowany termin obrony rok akademicki 2023/2024

Kierunek studiów: np. Inżynieria środowiska

poziom studiów: studia II stopnia

Katedra	Rodzaj pracy (LIC, INŻ, MGR)	Promotor	Temat pracy dyplomowej	Krótka charakterystyka pracy	Dotyczy tylko pracy magisterskiej	
					Praca eksperymentalna (TAK/NIE)	Krótki opis eksperymentu
Department of Environmental Biotechnology	MSc	prof. dr hab. inż. Paweł Brzuzan	Selected synthetic RNA ligands as inhibitors of microRNA function 92b	(keywords: anti-cancer substances; Huh7 (hepatoma) cell line assays; reporter method (luciferase); medicinal chemistry; microRNA) The aim of the research is to screen a library of synthetic RNA ligands for 92b-3p microRNA silencing, using a proprietary reporter system. We hypothesise that some of the selected in silico chemical molecules will act as docking ligands in the MIR92b molecule at sites hydrolysed by Drosha or Dicer ribonuclease (enzymes involved in microRNA biogenesis), inhibiting the formation of a mature miRNA molecule, MIR92b-3p	YES	Putative anti-cancer substances will be screened with an engineered Huh7 (hepatoma) reporter cell line.
Department of Environmental Biotechnology	MSc (na MBT)	dr hab. inż. Katarzyna Bułkowska, prof. UWM	Biogas production from agricultural waste during dark fermentation	The aim of the work is to determine the influence of selected technological conditions on the course of dark fermentation. The substrates used are wastes from the agricultural and food industries.	YES	The experiment consists in conducting laboratory tests in anaerobic reactors and process control based on the analysis of physicochemical indicators.
Department of Environmental Biotechnology	MSc	prof. dr hab. inż. Sławomir Ciesielski	Limitations in the production of bioplastics by microorganisms	The aim of the work is to review the literature on the microbiological production of bioplastics. Specifically, it aims to define the main problems that hinder the development of technologies for the production of bioplastics by microorganisms.	NIE	-
Department of Environmental Biotechnology	MSc	prof. dr hab. inż. Sławomir Ciesielski	Microbial production of surfactants	The aim of the work is to review the literature on the synthesis of surfactants by microorganisms. The specific objective is the chemical characterization of these compounds in the context of their use for environmental remediation.	NIE	-

Department of Environmental Biotechnology	MSc	prof. dr hab. inż. Agnieszka Cydzik-Kwiatkowska	Effect of microplastic on the activity of biomass in wastewater treatment systems (specjalność anglojęzyczna)	The aim of the work will be to determine the influence of microplastics present in wastewater on biomass activity.	YES	The experiments will be conducted for different doses and types of microplastic. In the study, the activity of activated granular sludge will be assessed by respirometric or enzymatic methods in the presence of microplastic. Laboratory measurements will be conducted by 2-3 months.
Department of Environmental Biotechnology	MSc	prof. dr hab. inż. Agnieszka Cydzik-Kwiatkowska	Microplastic – fate in wastewater treatment systems and best available technologies for its removal (specjalność anglojęzyczna)	The aim of the work will be to prepare a literature review on the fate of microplastics in the wastewater treatment system and technological solutions enabling their effective removal from wastewater.	NO	-
Department of Environmental Biotechnology	MSc (na MPE)	dr hab. inż. Mariusz Gusiatin, prof. UWM	Effectiveness of lignite-based semi-liquid materials for removing metals from soils	The objective of the study is to determine the effects of lignite-derived materials on the removal of metals from soils and the properties of the treated soil.	YES	Research will use the batch or column washing method to remove metals from soils. The semi-liquid materials will be tested under various operating conditions. Their effectiveness will be compared to commercial agents such as EDTA and/or biosurfactants.
Department of Environmental Biotechnology	Msc	dr inż. Sławomir Kasiński	Recycling vs energy recovery - towards the Circular Economy	The aim of the study is to compare the environmental benefits of material and energy recovery of selected groups of municipal waste. The work is based on the available scientific literature and free LCA programs.	No	Theoretical work
Department of Environmental Biotechnology	MSc	dr hab. inż. Tomasz Pokój, prof. UWM	Phosphorus recovery from sewage sl udge by struvite precipitation	The aim of the study is determine the optimal conditions for struvite precipitation from sewage sludge hydrolysates. The scope of the research includes the determination of the optimal time of sludge hydrolysis for the assumed pH and the recovery of phosphorus in the form of struvite from the obtained hydrolysates using different sources of magnesium, with a variable molar ratio of Mg: N: P and the reaction.	YES	Carrying out experiments for the hydrolysis of sewage sludge; preparation of a hydrolyzate for optimal hydrolysis conditions; performing struvite precipitation experiments for variable initial conditions; sampling at various intervals; analytical control of the process; The scope of physico-chemical analyzes includes: pH, COD, TOC, ammonium nitrogen, Kjeldahl nitrogen, orthophosphates, total phosphorus, dry matter and dry organic matter of sludge.

Department of Environmental Biotechnology	MSc (na MPE)	dr hab. inż. Maciej Woźny, prof. UWM	Evaluation of the fitotoxicity of selected post-extraction solutions for soil remediation / Określenie fitotoksyczności wybranych roztworów poekstrakcyjnych do remediacji gleby	Celem pracy jest określenie wpływu roztworów poekstrakcyjnych po płukaniu zanieczyszczonych gleb na kiełkowanie i wzrost wybranych gatunków roślin	YES	The aim of the study is to determine the effects of post-extraction solutions used to remediate contaminated soils on the germination and growth of selected plant species
Department of Environmental Biotechnology	MSc (na MPE)	dr hab. inż. Magdalena Zielińska, prof. UWM	The use of membrane filtration for the treatment of selected wastewater	The aim of the work will be to demonstrate the effect of the membrane *cut-off* and transmembrane pressure on the efficiency of pollutant removal from the selected type of wastewater and on the hydraulic efficiency of the membrane module.	YES	Ultrafiltration and microfiltration modules with ceramic membranes will be used in single- and multi-stage systems for filtration of selected wastewater. Based on the physico-chemical analyses of the streams and permeation tests, the rejection efficiency and hydraulic properties of the membrane module will be assessed. Based on the results, the possible variants of the management of permeate and retentate will be proposed.