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Title (1)	:	**Effect of polyvinylidene fluoride concentration in PVDF-TiO2-PVP composite membranes properties and its performance in bovine serum albumin rejection**
Journal	:	Case Studies in Chemical and Environmental Engineering
Document Type	:	Article
Publisher	:	Elsevier Ltd.
UniKL Author	:	Muzafar Zulkifli, Ahmad Naim Ahmad Yahaya
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Link to UniKL IR	:	
Link to Scopus Preview	:	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85182894452&doi=10.1016%2fj.cscee.2024.100620&partnerID=40&md5=fa8f61b4efc0fec8bbb29b193954ebfa
Abstract	:	In the present study, the polyvinylidene fluoride (PVDF) was incorporated with polyvinylpyrrolidone (PVP) and titanium dioxide (TiO2) nanoparticles to prepare PVDF-TiO2-PVP composite membrane for Bovine Serum Albumin (BSA) rejection from protein contaminated wastewater. The preparation of PVDF-TiO2-PVP composite membrane was conducted by a non-solvent phase inversion (NIPS) process with varying PVDF weight percentages ranging from 16 to 19 wt%. The polymer concentration plays a critical role in the formation of composite membranes that is commonly overlooked. The primary goal of this study is to examine how the concentration of polymers affects the process of membrane creation, the ensuing structure, and the properties of these membranes. Presently, there is a restricted comprehension concerning the impact of PVDF polymer concentration in the fabrication of membranes using the NIPS approach, particularly for PVDF-TiO2-PVP composite membranes. FE-SEM analysis revealed the lowest skin layer thickness and the number of macro-void formations in a PVDF composite membrane were at 16 wt% PVDF, compared to composite membranes over higher PVDF concentrations from 17 to 19 wt%. There were only slight variations in the percentages of individual elements across all PVDF-TiO2-PVP membranes, yet the values were identical for C, O, F, and Ti. The viscosity was lowest at 16 wt percent PVDF (576.5 MPa s) and greatest at 19 wt percent PVDF (2054.3 MPa s). It showed that 19%wt PVDF viscosity increased fourfold higher than 16%wt. As the concentration of PVDF was increased, a related decrease in the surface porosity of the membrane was observed.

Title (2)	:	**Assessing wineries' performance in managing critical control points for arsenic, lead, and cadmium contamination risk in the wine-making industry: A survey-based analysis utilizing performance indicators as a results tool**
Journal	:	Heliyon
Document Type	:	Article
Publisher	:	Elsevier Ltd.
UniKL Author	:	Amelia Md Som
Link to Full Text	:	https://www.sciencedirect.com/science/article/pii/S2405844023101708
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Abstract	:	Human health hazards appear in wine production. Wineries have implemented food safety management systems to control food hazards through Hazard Analysis Critical Control Point (HACCP). Wine-making industry applies HACCP by evaluating Critical Control Points (CCPs). One of the CCPs that exhibits inadequate control is the potential contamination risk of arsenic, cadmium, and lead throughout the winemaking procedure. Wineries performance level about controlling CCPs related to contamination risk by arsenic, cadmium and lead in the winemaking were analyzed. A sixteen-question questionnaire was made to achieve this research. Three indicators were calculated for training, legislation, and analysis performance components in CCPs control. Results revealed that wineries fault in analysis and legislation components. Identification and updating of legislation about As, Cd and Pb contamination risk is in starting performance level for wineries that produce less than 250,000 L/year wineries. Analysis performance level is even lower than legislation. Only one out of every three wineries possess information regarding the concentrations of arsenic, cadmium, and lead in the soils of vineyards where grapes are cultivated. Furthermore, the availability of data on their available concentrations in the soil solution is even more limited. Those wineries that controlled As, Cd and Pb concentrations make it according to official recommendations using techniques based on atomic absorption spectrometry. However, there is a lack of this spectrometry equipment in the wineries own laboratories.

Title (3)	:	**Chemical modification of linoleic acid via catalytic epoxidation of corn oil: A sustainable approach**
Journal	:	Environmental Progress and Sustainable Energy
Document Type	:	Article
Publisher	:	American Institute of Chemical Engineers
UniKL Author	:	Fahmi Asyadi Md Yusof
Link to Full Text	:	https://www.researchgate.net/publication/377368921_Chemical_modification_of_linoleic_acid_via_catalytic_epoxidation_of_corn_oil_A_sustainable_approach
Link to UniKL IR	:	
Link to Scopus Preview	:	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85182148849&doi=10.1002%2fep.14362&partnerID=40&md5=c5ee391bf36f920bdba3b56d45ca821c
Abstract	:	Epoxidized corn oil is of great interest because they are derived from sustainable, renewable natural resources and are environmentally friendly. There is a lack of extensive research on optimizing process parameters for the epoxidation of corn oil, which serves as the raw material. In this study, the epoxidation of corn oil was carried out by reacting formic acid and hydrogen peroxide, employing an in situ peracids mechanism. The findings revealed that the optimal reaction conditions for producing epoxidized corn oil with the highest oxirane content were a catalyst type of sulfuric acid, reaction temperature of 35°C, a molar ratio of formic acid to linoleic acid of 1:1, and a molar ratio of hydrogen peroxide to linoleic acid of 1.75:1. By employing these optimal conditions, the maximum relative conversion of palm oleic acid to oxirane was achieved at 82%. After 100 iterations, the reaction rate constant based on optimized epoxidized corn oil production was obtained as follows: = 0.13 mol L^{-1} min^{-1} , = 37.07 mol L^{-1} min^{-1} , and = 10.00 mol L^{-1} min^{-1} . The findings validated the kinetic model by showing good agreement between the simulation and experimental data.

Title (4)	:	**Enhancing boundary friction and wear reduction through adsorption control in protic ionic liquid and carbon mixtures**
Journal	:	Journal of Materials Science
Document Type	:	Article
Publisher	:	Springer Nature
UniKL Author	:	Siti Hartini Hamdan
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Link to Scopus Preview	:	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85181506386&doi=10.1007%2fs10853-023-09257-x&partnerID=40&md5=5f6ad346001098a6de2f960cdd578d63
Abstract	:	This study addresses the challenge of enhancing lubrication performance by exploring the potential of a protic ionic liquid (IL), [Oley][Oleic], in conjunction with carbon nanotube (CNT) mixtures. The primary objective is to determine the optimal CNT concentration that achieves effective lubrication for the IL-based lubricant. Through experimental investigation, notable reductions of 19.8 % in friction and 67.2% in wear are demonstrated when [Oley][Oleic] is blended with the optimum CNT concentration at 0.10 wt%. This study employs a friction-derived adsorption model to elucidate the underlying mechanisms of friction. The results indicate that the addition of CNTs leads to a larger adsorption surface coverage area of the lubricant molecules, resulting in decreased friction and wear. Synergistic attractive cooperative interactions among the IL molecules in the presence of CNTs are identified as a key factor in enhancing adsorption efficiency. These findings provide insights into the interaction between [Oley][Oleic] and CNTs when sheared, offering a predictive framework for understanding friction and wear behaviour specific to IL-based lubricants. By presenting a solution for reducing friction and wear, this study contributes to the development of energy-efficient and environmentally-friendly lubrication practices, opening avenues for further advancements in the field of lubrication and promoting sustainable tribological solutions for diverse applications.