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**REMOVAL OF WAX PARTICLES FROM WASTEWATER
OF WAX EMULSION PROCESS**

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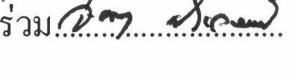
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น้ำเสียเสียเสียนแบบได้ถูกเตรียมขึ้นมาเพื่อใช้ในการศึกษาเบื้องต้นในการถ่าย
อิมัลชันและการแยกชั้นของน้ำเสียอิมัลชันจากการกระบวนการผลิตอิมัลชันไข ปัจจัยที่มีผล
กระทบต่อการถ่ายอิมัลชันและการแยกที่เลือกศึกษาคือ การเติมเกลืออิเล็กโทรไลต์ ได้
แก่ เกลือโซเดียมคลอไรด์และเกลืออะซูมิเนียมแอมโมเนียมชั้นเฟตหรืออะลัม อุณหภูมิ
และการกวน การเติมเกลืออิเล็กโทรไลต์ทำให้อิมัลชันถ่ายและปริมาณของเกลือที่
เติมลงไปขึ้นอยู่กับองค์ประกอบของแข็งในน้ำเสียอิมัลชัน อุณหภูมิมีผลเพียงเล็กน้อยต่อ
การแยกเฟสและการกวนมีผลต่อประสิทธิภาพการผสมของเกลือและน้ำเสียเสียน
แบบที่ทำให้เกิดการแยกขึ้น สภาพที่เหมาะสมต่อการแยกเฟสที่ได้จากการศึกษาเบื้อง
ต้นถูกนำมาใช้ถ่ายอิมัลชันของตัวอย่างน้ำเสียอิมัลชันจากการกระบวนการผลิตอิมัลชันไข
เฟสน้ำใสที่ได้หลังจากการแยกอนุภาค ไขและของแข็งอื่นๆออกแล้วถูกนำไปวิเคราะห์
หาคุณภาพน้ำ ได้แก่ ค่าความเป็นกรดด่าง ค่าซีโอดี ค่านำ้มันและไขมัน ปริมาณสาร
แ徊นโลย ค่าทีดีอส ค่าความเค็ม และความชุ่น ผลปรากฏว่า ค่าน้ำมันและไขมัน และ
ปริมาณสารแ徊นโลยอยู่ในช่วงมาตรฐานน้ำทึ้ง แสดงว่า การขัดอนุภาค ไขออกจากน้ำ
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The simulated wastewater was prepared for preliminary study of demulsification and phase separation of emulsified wastewater from wax emulsion process. Factors affecting demulsification and separation selected for the study are addition of electrolytes; sodium chloride and aluminium ammonium sulfate or alum, temperature and stirring rate. Addition of an electrolyte leads to emulsion breaking and the amount of salt required depends on solid content present in the emulsified wastewater. The temperature has slight effect on phase separation, and stirring rate affects on mixing efficiency of the electrolyte and the simulated wastewater, which leads to phase separation. The optimized conditions on phase separation obtained from the initial study were applied to demulsify an actual emulsified wastewater from wax emulsion process. Clear water phase, obtained after wax particles and other solid were removed, was characterized for water quality, i.e., pH, COD, oil and grease, suspended solid, TDS, salinity, and turbidity. The results showed that oil and grease, and suspended solids were within the limit of effluent standard indicated that high efficiency for the wax particle removal from wastewater was achieved.

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จุฬาลงกรณ์มหาวิทยาลัย

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ABBREVIATIONS

Abbreviation	Term
ASTM	American Society for Testing and Materials
cP	Centipoise
COD	Chemical Oxygen Demand
CMC	Critical Micelle Concentration
°C	Degree Celsius
ICP-AES	Inductive Couple plasma Atomic Emission Spectrometer
kg	Kilogram
M	Molar
mg/l	Milligram per Litter
min	Minute
ml	Milliliter
nm	Nanometre
NTU	Nephelometric Turbidity Unit
O/G	Oil and Grease
ppm	Part per Million
ppt	Part per Thousand
rpm	Round per Minute
SS	Suspended Solid
TDS	Total Dissolved Solid
wt %	Percentage by Weight
µm	Micrometer