

REMOVAL OF ORTHO-DICHLOROBENZENE BY FROTH FLOTATION
UNDER WINSOR TYPE III CONDITIONS

Ms. Sangobtip Pongstabadee

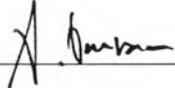
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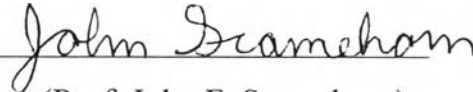
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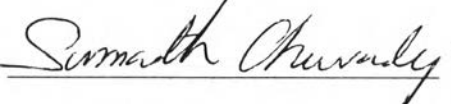


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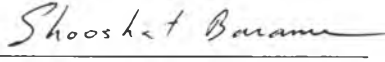
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ABSTRACT

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Removal of o-dichlorobenzene from water process was studied. The purpose of these studies was to determine whether or no the Winsor's Type III microemulsion could improve the removal efficiency of o-dichlorobenzene from water. The first part of these studied was to carry out the phase behavior of microemulsion. The second part of these experiments was to determine the ODCB removal efficiency of the froth flotation unit operated under the Winsor's type III conditions. From the experimental results, the removal efficiency of o-dichlorobenzene increased as the surfactant concentration increased, salinity increased (causing a Winsor Type I to III transition for the system) and oil/water ratio decreased. The cationic surfactant was more effective than either the monosulfate or the disulfonate anionic surfactants.

บทคัดย่อ

สงบทิพย์ พงศ์สถาปติ : การกำจัดออร์โธ-ไดคลอโรเบนซีนโดยวิธีการ
 ทำให้ลอยภายใต้สภาวะวินเซอร์ไทด์ทรีไมโครอิมัลชัน (REMOVAL ORTHO-
 DICHLOROBENZENE BY FROTH FLOTATION UNDER WINSOR TYPE III
 CONDITIONS) อ.ที่ปรึกษา : ศ.ดร.จอห์น เอฟ. สเค็มมาฮอร์น และ
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ในการวิจัยนี้ศึกษาการกำจัดออร์โธ-ไดคลอโรเบนซีน (ODCB) ออกจากน้ำ โดยมีวัตถุประสงค์เพื่อค้นหาสภาวะวินเซอร์ไทด์ทรีไมโครอิมัลชัน ซึ่งสามารถช่วยเพิ่มประสิทธิภาพการกำจัดออร์โธ-ไดคลอโรเบนซีนออกจากน้ำ ส่วนแรกของการศึกษาเพื่อหาสภาวะวินเซอร์ไทด์ทรีไมโครอิมัลชัน ส่วนที่สองของการทดลองนี้เพื่อหาประสิทธิภาพในการกำจัดออร์โธ-ไดคลอโรเบนซีนภายใต้สภาวะวินเซอร์ไทด์ทรีไมโครอิมัลชัน จากการผลทดลองพบว่าประสิทธิภาพในการกำจัดออร์โธ-ไดคลอโรเบนซีนเพิ่มขึ้นเมื่อความเข้มข้นของสารลดแรงตึงผิวเพิ่มขึ้น ความเค็มซึ่งเป็นสาเหตุของการเปลี่ยนสภาวะจากวินเซอร์แบบที่หนึ่งไปสู่วินเซอร์แบบที่สาม โดยประสิทธิภาพการกำจัดสารออร์โธ-ไดคลอโรเบนซีนสูงขึ้นเมื่อความเค็มเพิ่มสูงขึ้น และอัตราส่วนน้ำมันต่อน้ำลดลง การใช้สารลดแรงตึงผิวที่มีประจุเป็นบวกมีประสิทธิภาพในการกำจัดออร์โธ-ไดคลอโรเบนซีนสูงกว่าการใช้สารลดแรงตึงผิวที่มีประจุเป็นลบ

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