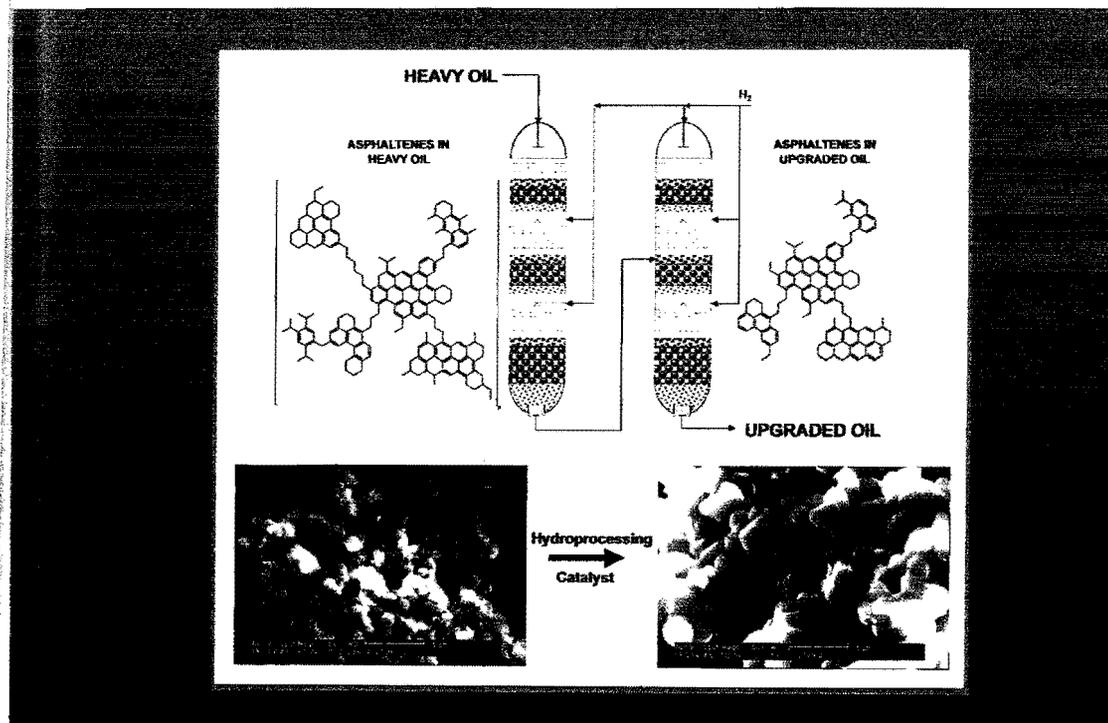


# Asphaltenes

## Chemical Transformation during Hydroprocessing of Heavy Oils



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 CRC Press  
Taylor & Francis Group

Exploring many aspects related to asphaltenes composition and conversion, **Asphaltenes: Chemical Transformation during Hydroprocessing of Heavy Oils** highlights the various changes that these heavy and complex molecules undergo during catalytic hydroprocessing.

After defining and characterizing asphaltene structure, the book examines the composition of petroleum and the processes and catalysts for upgrading heavy oils. It then details the characterization of asphaltenes after hydroprocessing and the effect of reaction conditions on their structures. The authors also analyze the deactivation and characterization of spent hydroprocessing catalysts as well as the role played by asphaltenes. They cover sediments formation during hydroprocessing and the role of asphaltenes on it. The final chapters describe the hydrocracking and kinetics of asphaltenes and the fractionation of heavy crudes and asphaltenes.

#### Features

- Offers different points of view on asphaltene structure
- Provides in-depth coverage of the hydroprocessing of heavy oils and the effect of asphaltenes on catalyst stability and life
- Includes up-to-date experimental characterization of asphaltenes before and after hydroprocessing, along with the effect of reaction conditions on their structure
- Discusses the role that asphaltenes play during deactivation of hydroprocessing catalysts
- Presents methods for preventing coke deposition, regeneration, and rejuvenation of spent catalysts
- Explores sediments formation during hydroprocessing and the role of asphaltenes on this process
- Covers hydrocracking, kinetics, and fractionation of asphaltenes

This book provides a deep understanding of how asphaltenes transform during hydroprocessing, offering insight on designing catalysts and processing for the upgrading of heavy oils.



**CRC Press**  
Taylor & Francis Group  
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2 Park Square, Milton Park  
Abingdon, Oxon OX14 4RN, UK

66307

ISBN: 978-1-4200-6630-2



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