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Characterisation of petroleum fouling with respect to operational parameters: an experimental study

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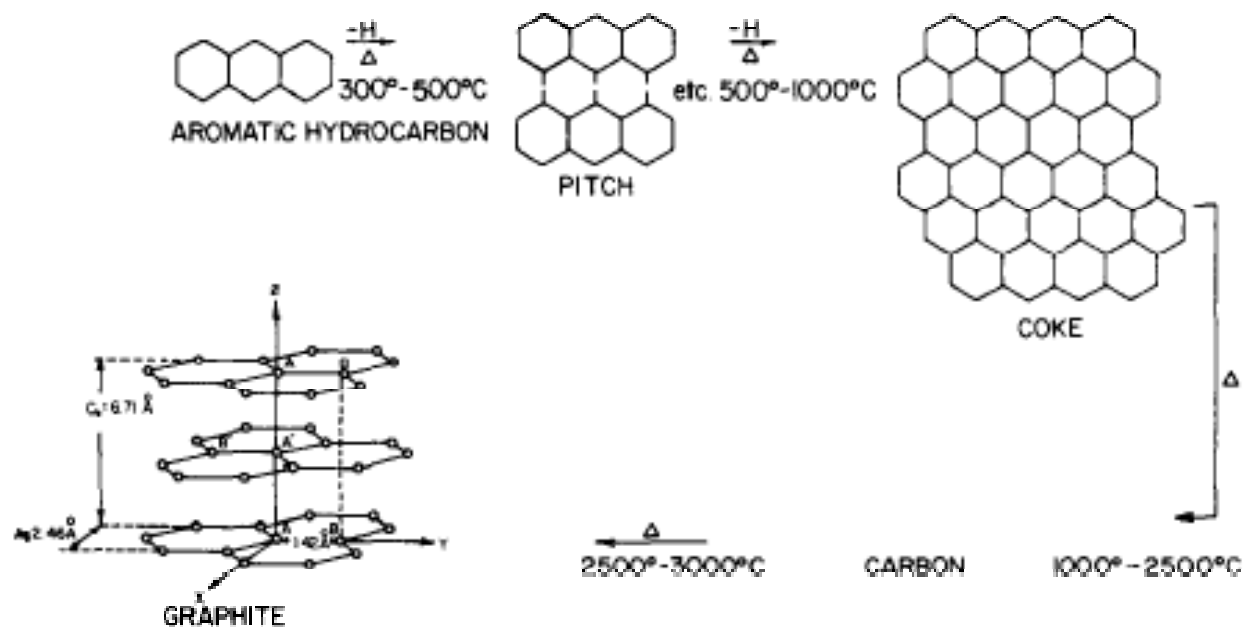
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Contents

- Background
- Introduction to my work
- MBR runs
- Characterisation method
- Conclusions



- Petroleum fouling in pre heat trains is mainly due to thermo-chemical reactions and nature of the feed material.



I.C. Lewis, *Carbon*, Vol. 30 N. 66 pp. 519-529, (1982)



Background 2/2

- Carbonisation is an aromatic growth and polymerization process.
- Major reactions involved:
 - C-H, C-C bond cleavage to form reactive free radicals
 - Molecular rearrangement
 - Thermal polymerization
 - Aromatic condensation
 - Elimination of side chains, H_2 .



Motivations and Objectives

- Petroleum fouling reactions are still not well understood.

Investigation of the effect of temperature-time history on the composition of the feed and deposits.

- There is a lack of standardized procedures suitable to characterise deposited foulants.

Provide a method to identify the chemical composition of an unknown refinery solid foulant deposit.

Approach

