

CHAPTER I

INTRODUCTION

In the oil industry the problem that is often found is wax deposition. It can cause the problem such as pipeline pressure increase, throughput reduction, and ultimately flow blocking. Moreover, these problems lead to a decrease in processing efficiency, and crude oil transportation.

One well-known method to solve wax deposition problem is based on lowering the concentration of the wax, a high molecular weight component in the mixture, thereby reducing the tendency of wax to deposit out of the crude oil. However, the important things that have to be known are that how the characteristics, the crystal structure, the composition, and the quantitative deposition of wax are. These will help suitably and more accurately solve the problem of wax deposition. Furthermore, it is essential to determine accurately the required tubing and flow line size for a desired production rate.

The aim of this thesis is, to study the characteristics and the properties of Thai waxy crude oils, to analyze the composition of the paraffinic heavy hydrocarbons, to quantify the amount of wax, and to investigate the chemical method to solve the problem of wax deposition. Chemical method is used to solve the wax deposition problem because it involves mainly laboratory work and also does not require the use of high efficiency and high cost equipments while the other two commonly used methods involve mechanical and thermal work need to be used them.