
Project 3 – TUWAX Software Maintenance and Development

Objectives

The objectives of this project are to maintain TUWAX software compatibility and functionality and to improve TUWAX software by updating and incorporating additional paraffin deposition models and simulation algorithms

Project Description

TUWAX software is a paraffin deposition simulator developed by Tulsa University Paraffin Deposition Projects (TUPDP). It is capable of simulating single-phase and multiphase mixture paraffin deposition, e.g., average deposit thickness and wax fraction as a function of axial length and time. The software is composed of a graphic user interface written in MS-Excel VBA for parameter input and result visualization, while the main simulation modules are developed with FORTRAN language. WAXPro Steady State model has several modules, subroutines, and functions. The main modules are momentum, heat transfer, pipeline integration, PVT properties, and numerical methods. Continual maintenance is required to ensure the program functionality and run effectively without any bugs. Moreover, further improvements by incorporating additional paraffin deposition models, simulation algorithms, and experimental results into the program are necessary. The proposed TUWAX software maintenance and development can be summarized as follows: