

Abstract

The present invention relates to a method, an apparatus and a system for the real-time optimization of a molecular-level device, and a storage medium. The method comprises: determining the molecular composition of raw materials for petroleum processing; inputting the molecular composition of the raw materials into a pre-trained product prediction model, so as to obtain a predicted molecular composition of corresponding predicted products and a predicted molecular content of various single molecules; acquiring a preset standard set for a preset target product; determining, according to the predicted molecular composition and the predicted molecular content of the various single molecules, whether the predicted products meet preset standards for target products corresponding to predicted products in the preset standard set; and, if no preset standards of the corresponding target product are met, adjusting operation parameters in the product prediction model, so as to reacquire the predicted molecular composition of the predicted products and the predicted molecular content of the various single molecules until the preset standards are met. By means of the present invention, molecular-level integral simulation and real-time optimization of the molecular-level device from the raw materials to the product processing process are achieved, and the precision and production efficiency are improved.