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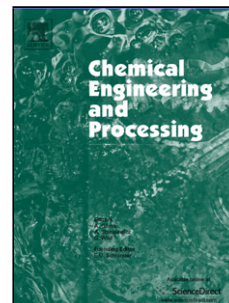
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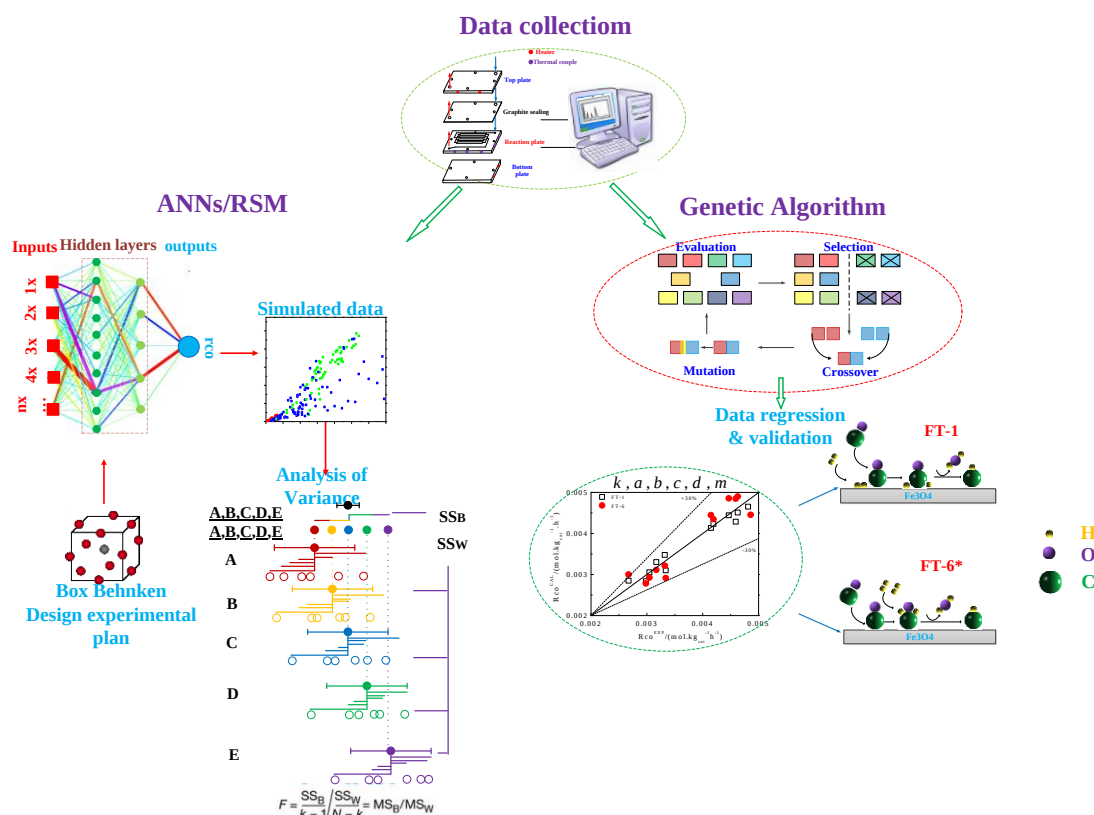


Fischer-Tropsch synthesis using iron-based catalyst in a microchannel reactor: hybrid lump kinetic with ANNs/RSM

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Graphical abstract



A hybrid methodology of combining lump kinetic using GA with ANNs/RSM for modeling FT synthesis in a microchannel reactor using iron-based catalyst was proposed in this work. The proposed method was able to extensively analyze the effect of operating conditions including TOS (time on stream), partial pressures of different gases in reaction system (H_2 , CO , CO_2 and H_2O) on CO disappearance rate in nonlinear noisy processes with significant changes of operational parameters in experimental design plan during FT synthesis using iron-based catalyst in microchannel reactor.

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