

Computational in Chemical Engineering

Mid Term Evaluation

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From the Research Paper:---

From the research paper, I learnt that atmospheric pressure offers avenues for chemical reaction engineering due to the abundance of raw materials.

Despite its potential, inherent lack of selectivity poses challenges.

Researchers are trying to address these challenges through techniques such as **plasma catalysis and tailored waveforms.**

Graph theory emerges as a valuable tool to analyze complex plasma chemical reaction systems, enabling the identification of important pathways, disruptive species, and potential improvements related to energy efficiency.

The research paper introduces the application of graph theory as a novel tool for analyzing complex plasma chemical reaction systems. By representing reactions and species as nodes and edges in graphs.

Overall research paper contribute to advance our understanding of plasma chemical reaction systems and offer methodologies for addressing key engineering questions.

Limitations of Dijkstra's algo:---

Dijkstra's algorithm, may have limitations when applied to plasma chemical reaction engineering:

Algo assumes that all edge weights are non-negative. In plasma chemical reaction systems, the "weights" can be negative. If these values can be negative algorithm may not provide accurate results

Plasma chemical reaction systems may involve many species and reactions, resulting in complex networks with densely interconnected nodes and edges. Algo may struggle to work efficiently.

Plasma chemical reaction engineering often requires factors such as the influence of reaction kinetics, and multi-objective optimization. Algo, while useful for pathfinding, may not directly address these additional considerations. We must modify it further to make it suitable for such problems.