SLURRY HYDROCRACKER PROJECT

Appendix J - Technology Evaluation

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DATE: April 9th, 2020

Table of Contents

J.1 SUMMARY

This appendix contains the technology evaluation matrices for the catalyst selection and hydrogen production.

J.2 TECHNOLOGY EVALUATION MATRIX

Table J1. Process catalyst evaluation [1, 2, 3, 4].

Catalyst	Heterogeneous (Low-Activity) Catalyst			Homogeneous (High-Activity) Catalyst		
	Score	Weight Factor	Weighted Ranking	Score	Weight Factor	Weighted Ranking
Amount of Catalyst Required	3	6	18	6	6	36
Catalyst Cost	6	9	54	3	9	27
Rate of Desulfurization	6	6	36	9	6	54
Process Complexity	9	6	54	1	6	6
Total	162			123		

Table J2. Hydrogen production evaluation [5, 6, 7].

Hydrogen Production Technology	Steam Methane Reforming			Partial Oxidation of Heavy Hydrocarbons		
	Score	Weight Factor	Weighted Ranking	Score	Weight Factor	Weighted Ranking
Hydrogen Purity	9	6	36	9	6	36
Capital Cost	6	3	18	3	3	9
CO_2 Emissions	6	3	18	6	3	18
Process Efficiency	6	6	36	3	6	18
Total	108			81		

Score:

1 - Least Desirable Option

3 - Less Desirable Option

6 - More Desirable Option

9 - Most Desirable Option

Weight Factor:

1 - Low Importance

3 - Medium-Low Importance

6 - Medium-High Importance

9 - High Importance

J.3 REFERENCES

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