ICATCE 2022 Submission 0230

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Submission 0230	
Title	Experimental Design Model To Reduce The Number Of Emulsion Polymer Products Reject At PT. AHP
Paper:	(Jul 28, 03:08 GMT)
Author keywords	chemical industry emulsion polymer quality experimental design
EasyChair keyphrases	no good products (126), chemical engineering (90), advanced technology (90), source of variation sum of square df (84), variation sum of square df mean (77), square df mean of square (69), effect of cooling temperature process (69), significant effect of cooling temperature (69), failure mode and effect analysis (69), observation time (60), sum average std dev (60), average particle size value (60), desired particle size standard (60), significant value or probability (60), cooling temperature process parameters (60), experimental design (60), validation of temperature and time parameters (51), temperature cooling (50), no significant effect (47), sig between groups (47), aim of reducing (47), groups count sum (47), feeding start temperature (47), polymerization reaction tends (47), temperature parameters feeding (47), cooling temperature parameters (47), average particle size (47), experimental design method (47), design and analysis of experiments (46), high rpm too high rpm (46), test source of variation sum (46), effect of temperature feeding process (46), feeding temperature and observation time (46), significant effect of temperature feeding (46), standardization and validation of temperature (46)
Abstract	PT AHP is a chemical industry with the main product of emulsion polymer. The problem faced is the inconsistent product quality, especially the GP 31XXC product. PT AHP must immediately take action to reduce problem products, and increase productivity. The purpose of this study was to identify the cause of the problem, provide suggestions for improvement, and find out the decline in the no-good GP 31XXC product after repairs were made. This study uses an experimental design method, with SPSS17.0 statistical analysis. The results of the application of the experimental design show that the cause of the problem with the GP 31XXC product is the technical production process, namely, the cooling temperature parameters, feeding starting temperature, and inappropriate observation time. Proposed improvements made are changes to standardization and validation of temperature and time parameters. The cooling temperature is to 95°C - 96°C, the starting temperature is feeding on 80°C to 89°C, and the observation time is from 90 minutes - 120 minutes to a minimum of 93 minutes. The decline in the GP 31XXC no-good product after repairs were made was 90%, from 10 batches to 1 batch.
Submitted	Jul 28, 03:08 GMT
Last update	Jul 28, 03:08 GMT

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