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Handling of Automotive Paint Shop Sludge - A Greener Way †

Amit Kumar Tiwari [1*], A. K. Rathore [2]

[1] Student, M.Tech (Chemical Engineering), Department of Chemical Engineering, Harcourt Butler Technical University, Kanpur, Uttar Pradesh, India; amit.tiwari216013@gmail.com (A.K.T.)
[2] Asst. Professor, Department of Chemical Engineering, Harcourt Butler Technical University, Kanpur, Uttar Pradesh, India; akrathore@hbtu.ac.in (A.K.R.)
* Correspondence: amit.tiwari216013@gmail.com (A.K.T.);
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Abstract: As a result of increasing economic activities, we are witnessing an annual global increase in the production of Automotives like Trucks, cars, etc. So the present study aims to explore the value addition of paint sludge generated from automotive paint shops of the vehicle industry. Because of current environmental conditions, there is a need to search for greener options for handling the sludge. One such way is pyrolysis. The Painting on vehicles is generally done to achieve visual Quality along with rust prevention. This involves a series of operations such as Pre-treatment (phosphate coating is given for improving paint adhesion and to increase corrosion resistance), Primer application (better adhesion), and final top coating of paint (a cosmetic value to the body).
The primary source of hazardous wastes at an automotive manufacturing plant is the pre-treatment and painting process, and the major waste fraction is the Phosphate sludge & Paint sludge. These are hazardous waste that poses a serious risk for both health and the environment. That is causing a huge amount of sludge generation every year. The above processes involve the use of hazardous chemicals, and their disposal is a major challenge for industrial and academic research. Sludge generated from the paint shop has the potential to generate value-added products. Pyrolysis represents a modern, alternative green technology for treating waste. The disposal of paint sludge through pyrolysis results in the formation of solid char, liquid oil and gas.

Keywords: environmental conditions; pyrolysis; paint sludge; green technology.

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Conflicts of Interest

The authors declare no conflict of interest.