

## ALGORITHMS FOR STUDYING EXPERIMENTAL DATA IN CHEMICAL ENGINEERING OF TITANIUM DIOXIDE

Seleznov R.V., Bukhkalov S.I., Iglina S.P.

*National Technical University*

*«Kharkiv Polytechnic Institute», Kharkiv*

An article is presented on the definition of the components of the study of the utilization of spent sulfuric acid (SSA) for the technology of titanium dioxide production <https://repository.kpi.kharkov.ua/handle/KhPI-Press/88721>.

Chemical engineering of sustainable development of the utilization of hydrolytic sulfuric acid (HSA) of production processes is considered as examples according to algorithms <https://doi.org/10.20998/2220-4784.2021.02.10>

The study of the utilization of spent sulfuric acid (SSA) for the technology of titanium dioxide production is associated with the scientific justification and characterization of the components of technical solutions, for example, according to the hierarchy:

1. Classification-identification of the contact production process without an intermediate absorption stage <https://doi.org/10.20998/2220-4784.2020.06.13>.

2. Processes for obtaining iron sulfate from hydrolytic acid as an example of modern chemical engineering.

3. Evaporation of hydrolytic acid as processes with the release of iron sulfates <https://doi.org/10.20998/2220-4784.2021.02.10>.

4. Classification-identification of the processes of thermal decomposition of HSA with the production of sulfur dioxide.

5. Preparation of ammonium sulfate and extraction of V, Al, Ti, Cr compounds from hydrolytic sulfuric acid.

The essence of the research work on improving the innovative method of chemical engineering is considered as determining the hierarchy of energy consumption optimization of an integrated system of production processes using modern technological schemes of secondary raw materials. <https://repository.kpi.kharkov.ua/handle/KhPI-Press/88719>

The study of chemical engineering objects is usually associated with varieties of intellectual property materials that include individual elements of scientific calculations <https://doi.org/10.20998/2220-4784.2021.01.12> <https://doi.org/10.20998/2220-4784.2020.05.06>

The target tasks of the research using algorithms are related to determining the evaporation rate: preparation of the experiment and selection of parameters; conducting evaporation and recording parameters; mathematical data processing and analysis of results <https://doi.org/10.20998/2220-4784.2021.02.11> <https://doi.org/10.20998/2220-4784.2022.01.04> <https://doi.org/10.20998/2220-4784.2022.01.05>