Making a medical diagnosis using X-ray images in short called RTG is still the most popular method, especially in the case of lung diseases. Doctors and radiologists analyze such photos and according to their expertise try to make a diagnosis or direct for additional tests.

The main research goal is to develop a method to isolate pathological changes from digital chest X-ray images. It combines the actions of extraction of nodular changes and fibrous in the lungs, which is to allow the introduction of a new tool supporting the diagnostic process. The proposed method is to maximize the possibility of getting the biggest amount of information that will contribute to a more efficient diagnosis by a person making the diagnosis.

The X-ray image processing process will consist of stages containing methods converting the initial image. These include actions on the histogram of the studied images, where based on existing adaptation and histogram alignment properties, a new property has been developed which improves the quality of the analyzed images. Due to possible occurrence of noise filtration and morphological operations were used to reduce that issue. In such processed image it is possible to segment pathological changes on a given part of the image. An additional stage is applying the classification on a fragment or whole of the X-ray image being examined. Person conducting the diagnosis of the photo by selecting given element of the lung receives feedback what is the marked lung element - possible nodular change, fibrosis, lung field, bones. The research was carried out under the supervision of a radiologist.

The tests were performed on real chest X-ray images without patients' personal data obtained through cooperation with a radiologist expert. The proposed methods in the expert's evaluation improve the diagnostic process, whereas the presented method complements the imaging process using X-ray images and supports the work on describing and making a diagnosis.