

## SUMMARY

The dissertation presents the method to measure the unorganized emission of CO<sub>2</sub> from the surface of the areas formed from thermally active post-coal waste. The level of this emission from the surface of selected post-coal dumps has been determined.

The measurement method, utilizing the designed and constructed measuring device, has been based on a chamber method operating in a version open into the atmosphere.

The measuring method and device developed were designed considering the specificity of the conditions taking place in the objects formed from thermally active post-coal waste. Hence, the measuring device is resistant to elevated temperature and pollutants occurring in the gases emitted from the post-coal dumps. Its size and way of assembling it have been adapted to the particle size composition of the waste considered. Presented in the thesis are the results of laboratory testing of the measuring device developed. The tests discussed were aimed at performing calibration of the measuring gauges utilized, defining the conditions of application of the measuring unit, and comparing the unorganized emission of CO<sub>2</sub> with the applied reference emission.

On the basis of conclusions of the laboratory tests performed, and considering the conditions taking place in the objects formed from thermally active post-coal waste, the methodology to conduct site measurements was elaborated.

The measuring method and device developed were used in investigating the unorganized CO<sub>2</sub> emission from the objects formed from thermally active post-coal waste. The site tests proved the correctness of constructional solutions utilized in the measuring device presented. The levels of unorganized CO<sub>2</sub> emission, computed on the basis of parameters measured, were evaluated depending on the shape of surface, degree of thermal activity, and fire prevention and extinguishing works made at the experimental testing site. Also, presented in the thesis are the results of investigation of unorganized emission from the dumps formed from post-coal waste thermally inactive.