

## PAH EMISSION TESTING FROM THE SOLID FUELS COMBUSTION IN RESIDENTIAL FURNACES

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In Belarus solid fuels especially firewood and peat briquette are the predominant fuel types used for heating in the residential sector of rural communities and towns. They are mainly fired in domestic furnaces of various design; the input of such sources into total emissions are very high, especially for such pollutants as polycyclic aromatic hydrocarbons. So investigations are vital for emission estimates perfection, control measures elaboration and emission projections in view of possible changes in fuel balance. In the paper the procedure for and results of a test study of polycyclic aromatic hydrocarbon (PAH) emission from a few types of solid fuels combustion in residential furnaces of various design typical for Belarus are discussed. Experimental work for the PAH emission evaluation included: aerosol and vapor PAH sampling from waste gases; samples preparations; analytical determination of PAH in samples; data processing. The aerosol and vapor phases of PAH were collected by ordinary sampling train with pumping of waste gases through filter (first stage) and sorbent (second stage). Greatest levels of PAH emission were detected from domestic wastes and wood waste combustion. Lowest levels of PAH emission are from peat briquette combustion. It was found that PAH concentration in waste gases from wood combustion also varies significantly depending on the type of wood: highest content of PAH is typical for waste gases from birch firewood combustion in comparison with pine firewood combustion. Draft PAH emission factors are proposed with intended application for emission inventory of such installations.