Abstract

This master thesis was tasked to find out how the parameter of interior atmosphere changes at student´s club „Mrtvá Ryba“, that means atmospheric aerosols sized from 0,524 to 20 micrometers. This work tries to show indoor aerosols before and after the smoking ban and its comparison.

This work describes concentrations PM_1 and PM_{10}, and their behavior per day. Concentrations was measured by APS (Aerodynamic particle sizer). The measurement was the first step in the non-smoking club, then processing with retrieved informations in CoPlot, CoStat and Excel, where the statistical method has done, and comparison with previous values. T-tests was used for statistics and linear regresion. The result confirms, what was it supposed to, so concentracion values are significantly different.

The average concentration of all measured days (six) of smoking campaign was at PM_1 13,28 $\mu g.m^{-3}$ and at PM_{10} 23,38 $\mu g.m^{-3}$. The average concentration of all measured days (thirty six) of non-smoking campaign was at PM_1 4,88 $\mu g.m^{-3}$ and at PM_{10} 24,61 $\mu g.m^{-3}$.

Resulting concentration of aerosol particles was explicity lower at non-smoking period than at smoking period. Contamination of interior enviroment is influenced by many factors. The most important factor is presence of persons and their number, concentration of outdoor environment, ventilation, its way and intensity, burning of candle, using of stoves, etc.

Concentration of PM_{10} had increased for 28 % after coming twelve guests. One person produces coarse aerosol 1 $\mu g.m^{-3}$. From gained data and informations was determinated so called estimation of addition bringing smoke, its concentration was 8,95 $\mu g.m^{-3}$. The ban of smoking at the restaurants, bars, and clubs is big and important move in correct way.