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The purpose of the visit was to continue in experimental measurements that are part of joint project of the Open University and Comenius University. The aim was to gain more experimental data especially concerning the influence of water vapours in carbon dioxide on corona discharge parameters and ozone formation.

The experiment was carried out in all four basic variations (positive corona discharge in flowing and static regime and negative corona discharge in both flowing and static regime). All these variations were repeated for two chosen levels of water vapours concentration in carbon dioxide (45 ppm and 7000 ppm). The higher level of humidity was chosen much higher than during last experiments carried out last year (approximately 1700 ppm of water in carbon dioxide or less). The reason was that last year measurements did not show any significant effect of water vapours on the discharge parameters or ozone production. The experimental data gained during this visit shows evident effect of higher amount of water vapours on ozone production and slightly smaller effect on current-voltage discharge characteristics.

The results of measurements show different effects of water vapours in positive corona discharge and in negative corona discharge. In case of positive corona the amount of ozone produced in the reactor is lower with higher amount of water vapours and discharge current is almost the same for both levels of humidity. On

the opposite side the ozone concentration gets higher and discharge current is slightly lower with higher level of humidity for negative corona discharge. These different effects for two polarities of corona discharge need detailed analysis and probably more experimental measurements for explanation.

Onset voltage measurements show some strange dependence on the ozone concentration. The situation is different from the expected one and these measurements need definitely more repetitions and maybe some adjustments.

In the near future more collaboration with professor N. J. Mason is planned to continue in experiments concerning gaining more information on the processes in corona discharge fed by mixture of carbon dioxide and water vapours. Experimental apparatus will be further modified and extended to include measurement of temperature for example.

Results will be processed and after comparison with other data gained at experimental apparatus in Bratislava published.