

Gymnázium Viliama Paulinyho-Tótha  
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## EU CONTEST FOR YOUNG SCIENTISTS

Field: Environment

### DECARBONISATION OF EMISSION GASES BY INJECTION OF SODIUM HYDROXIDE

**2022**

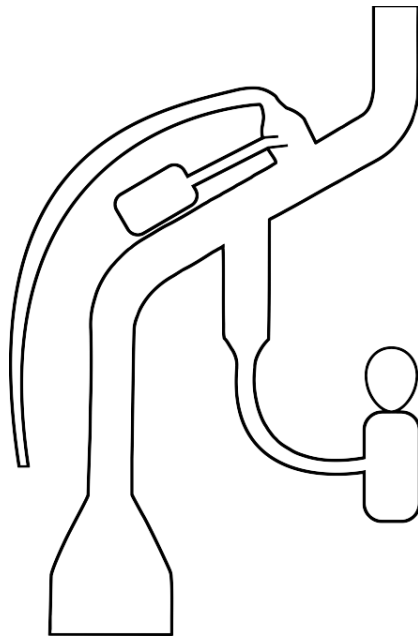
Martin, Slovakia

Participants:  
**Marek Červeň**  
**Martin Pecko**

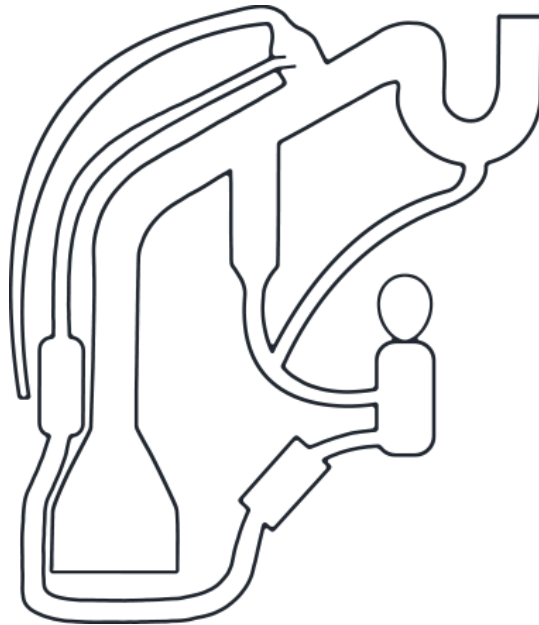
**Organisation:**  
AMAVET Festival  
vedy a techniky

**School:**  
Gymnázium Viliama  
Paulinyho-Tótha, Martin





*Figure 1: first sketch (2021)*



*Figure 2: complete sketch of the functioning model (2021)*

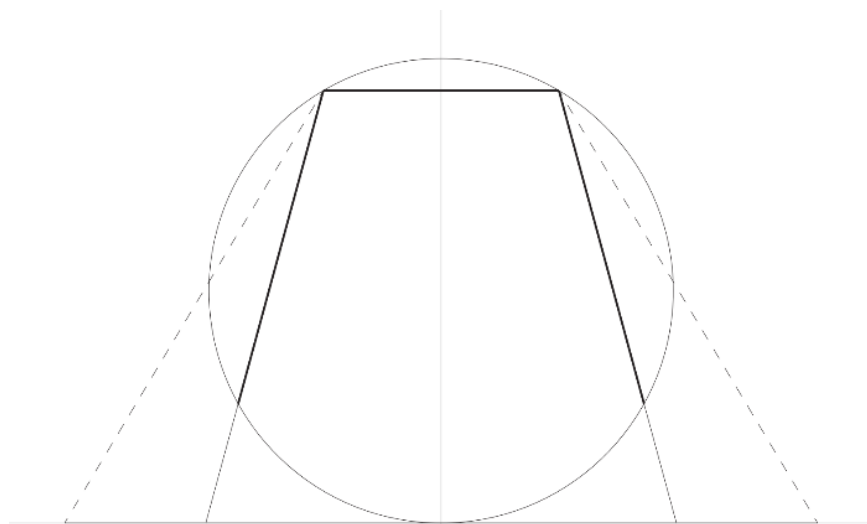


Figure 3: graphic representation of NaOH injection (2021)

<b>Material</b>	<b>Melting point</b>	<b>Applicable in the bottom part (600°C -1200°C)</b>	<b>Applicable in the upper part (150°C-300°C)</b>
<b>PVC</b>	92°C	NO	NO
<b>PP-HT</b>	165°C	NO	YES / NO
<b>Galvanized steel</b>	1500°C	YES	YES
<b>Cast iron</b>	1127°C -1204°C	YES / NO	YES
<b>Stainless steel</b>	1400°C -1450°C	YES	YES
<b>ABS</b>	200°C	NO	YES / NO
<b>PTFE</b>	327°C	NO	NO

Table 1: division of sample materials according to their compatibility (2022)

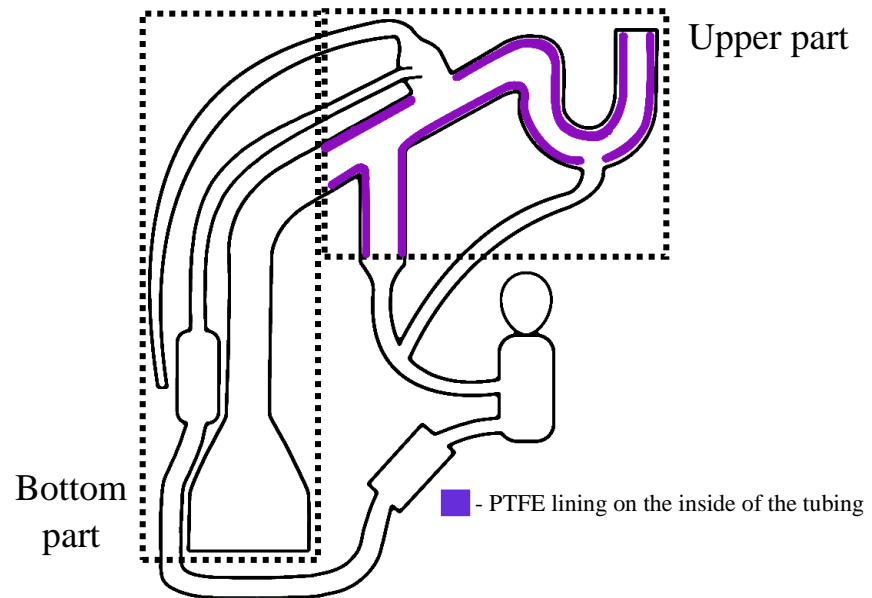


Figure 4: model sketch with applied PTFE material (2022)



Figure 5: original NaOH injection idea (2021)



*Figure 6: NaOH injection rework (2021)*



*Figure 7: original prototype (2021)*



Figure 8: final model (2022)

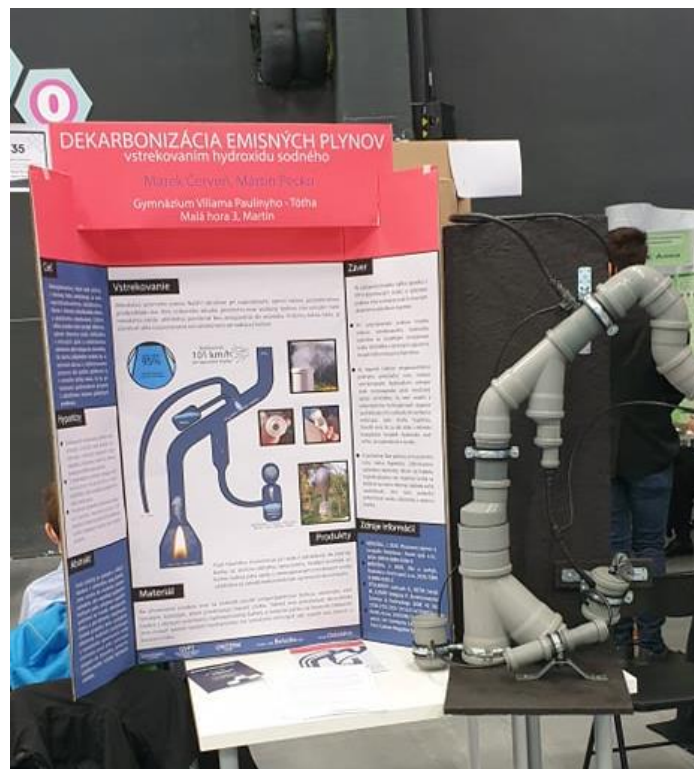


Figure 9: presentation for AMAVET (2021)