Contribution ID: **574** Type: **Oral Presentation**

Impact of Relative Humidity on the Adsorption of Volatile Organic Compounds by Industrial Porous Materials

Thursday, 2 June 2022 14:30 (15 minutes)

The presence of pollutants in the air is becoming an area of significant interest and there has been an increasing concern about air quality and its impact on health due to the presence of volatile organic compounds (VOC) in the air. VOC molecules include toluene, formaldehyde, methylene chloride, tetrachloroethylene, xylene, acetone and benzene which may appear in different forms as in solvents, paints or packaging materials. It is important to find a solution for the removal of volatile organic pollutants from the air. Porous materials are considered as a cost effective route to capture VOC pollutants and the reason for their success is the high fraction of pore volume and adsorption sites for trapping volatile species. Zeolites and activated carbons are widely used due to their low cost and ease of availability.

VOC concentrations can vary in different environments but are significantly lower than the moisture concentration. Therefore, water molecules would be competing for the same adsorption sites as VOCs and it would be important to assess the impact of humidity on the choice of porous material for removing certain VOC molecules. This study will look at the impact of humidity on a series of common industrial porous materials which are potentially usable for capturing VOCs.

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References

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Time Block Preference

Time Block B (14:00-17:00 CET)

Participation

Unsure

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