

### Adsorption Column Dynamics of VOCs in Monolith Adsorber

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The performance of an adsorption-based process greatly depends on the effectiveness of design and the operating conditions. Over the past few decades, lots of studies and industrial applications have been conducted in a charged column with pelletized adsorbents in this area. In general the monolith (or honeycomb) reactor is widely adopted in catalytic processes due to their unique features. In other words, it provides 1) very low pressure drop, 2) high surface to volume ratio, 3) minimal channeling, 4) excellent mass transfer characteristics, etc. However, there have been limited studies that tried to develop a mathematical model and to assess the performance of monolith reactor in adsorption based process. Therefore, the main objective of the present work was to acquire accurate information on adsorption characteristics of VOCs and water vapour and to examine the potential of monolith adsorber, in this area.