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Type: **Oral Presentation**

## Investigating the fluid behavior of the mixture of smoke and air in the porous filter part of the cigarette

*Wednesday, 25 September 2024 10:00 (15 minutes)*

Investigation of cigarette rod's fluid behavior and flow regime has a high importance regarding the concerns of human health and environmental perspectives. The simulation study in the case of cigarette smoke can be performed in time-dependent calculations for tobacco part and stationary calculations for the filter part. In this study, the modeling was tried to be accomplished in the filter part through COMSOL-Multiphysics software. Equations that were utilized for modeling contains the formulas of filter porosity and permeability in the fibrous beds. Employing the mentioned simulation tool, velocity and pressure contours, heat transfer behavior and some other elements can be obtained. By the comparison of the mentioned contours, the difference in the values of parameters such as velocity and pressure could be obviously observed (suction terminal to tobacco terminal).

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**Primary author:** HOSSEINI, Seyyed Reza (University of Tabriz, Department of Chemical Engineering and Petroleum)

**Co-authors:** Dr AGHDASINIA, Hassan (University of Tabriz, Department of Chemical Engineering and Petroleum); Prof. PEIGHAMBARDOST, Seyed Jamaledin (University of Tabriz, Department of Chemical Engineering and Petroleum)

**Presenter:** HOSSEINI, Seyyed Reza (University of Tabriz, Department of Chemical Engineering and Petroleum)

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