The Indoor Chemical Human Emissions and Reactivity Project (ICHEAR): First Results


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Title: The Indoor Chemical Human Emissions and Reactivity Project (ICHEAR): First Results

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Abstract (≤ 300 words)
Here we present first results from the project “Indoor Chemical Human Emissions and Reactivity” (ICHEAR). The aim of this project is to chemically characterize how human emissions, the single common factor in all dwellings, impact indoor air chemistry. The measurements were conducted in stainless steel climate chambers at the Technical University of Denmark (DTU) using state-of-the-art instruments from the Max Planck Institute for Chemistry (MPIC), the Swedish Environmental Research Institute (IVL), and École Polytechnique Fédérale de Lausanne (EPFL). During April-May 2019, groups of four persons (two males and two females) wearing pants and long-sleeve shirts or shorts and t-shirts occupied a 22m³ stainless steel climate chamber daily (air exchange rate 3 h⁻¹). The emissions and their chemical transformations were quantified under various environmental conditions with and without ozone present in the chamber air. This poster shows first results for selected volatile organic compounds, OH reactivity and secondary organic aerosol concentrations. Variations were seen as a function of ozone concentration, fraction of exposed skin, temperature and humidity.

Keywords (≤ 5): indoor air, human emissions, VOC, OH reactivity, secondary organic aerosols

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