1. No.
   2018G034

2. Title
   Evaluation of ETS (environmental tobacco smoke) and THS (thirdhand smoke) generated by conbudtion cigarettes and heat-not-burn cigarettes focusing on the chemical composition and odor

3. Period
   2018-2021

4. Summary
   We investigated the chemical compositions and the odor characteristics of the thirdhand smoke (THS) generated by the smoking of heated tobaccos (HT) and a conventional cigarette. The nicotine emission rates from the THS generated from the HTs were lower than that from the conventional cigarette at the initial stage. The nicotine emission rate from the THS generated from HTs decreased more slowly with time, and after several days, was higher than that from the THS of the conventional cigarette. The odor intensity of the THS of the HT was 2.5, which is much lower than that of the conventional cigarette at 4. The odor of the HT can be attributed to nitrogen-containing compounds such as nicotine, ethenyl pyridine, and oxygen-containing compounds such as furfural, acetaldehyde, propylene glycol, acetic acid.
   The mist of the solvents such as glycerin, propylene glycol contained in the mainstream smoke of TH was found to affect the emission rate of chemical compounds. The nicotine emission rate from the THS was reduced by the simultaneous use of a HT and a conventional cigarette, presumably due to the evaporation rate reduction by the solvents. The chemical compositions in the mainstream smoke of THs were significantly changed by the temperature of the heating device. A good correlation was found between the market share of HTs with the acrolein concentration in the mainstream smoke.