1. No.
   2020G033

2. Title
   Development of standard test methodology for evaluating chemical hazard of E-cigarette and heat-not-burn tobacco based on aerosol analysis

3. Period
   2020-2021

4. Summary
   Emission levels and related hazardous effects are still controversial of chemicals in the mainstream aerosol of the heated tobaccos products due to a lack of consistent sampling and analytical methodologies. This study aimed to investigate influence of puffing and environmental conditions on the chemical and physical property of aerosol particles for further proposal of test protocols. Firstly, the aerosol particles were generated from heated tobacco products and subsequently introduced into a test chamber by changing relative humidity (RH). The results showed that the $PM_{2.5}/PM_{10}$ concentrations and their decay rates significantly depended on the RH because of hygroscopic property. Secondly, the emission mechanism of ammonia in the aerosol was investigated employing different kinds of heated tobacco products. The results revealed that ammonia in mainstream aerosols was emitted by a common thermal process, most likely thermal extraction in water vapour from tobacco leaves, regardless of the device. Furthermore, the heating temperature influenced the gas–particle distribution of ammonia. These findings work for better understanding of the mainstream aerosols and further building of a standard test methodology.