Most people spend more than 80% of their time indoors (Li et al., 2000), so that indoor air quality (IAQ) is important to human health. Volatile organic compounds (VOCs) play a key role in IAQ (Zhang et al., 2001). High indoor VOC concentration levels have been commonly founded in newly built buildings in China (Chen et al., 2013). Various building materials, such as furniture, wood floor and paint, are known as the main indoor VOC emission sources. In order to reduce indoor VOCs concentrations and improve the IAQ, it is necessary to study the emission characteristics of the pollution sources.

Temperature is one of the key factors affecting the VOC emissions from wet building materials. Yang et al. (2001) established a VOCs emission model of the wet material and pointed out that the influence of temperature differs among VOCs. Zhang et al. (2008) tested the concentration of total VOCs (TVOC) emitted by a coating in a small-scale environmental chamber at 20 °C, 25 °C, 30 °C. They claimed that, a dried layer was formed rapidly on the surface of the wet building material when the temperature reached 30 °C, which might hinder the release of VOCs from the material. Chen (2012) tested the VOC emissions of a cement paint at 33 °C and 43 °C, and found that the VOC concentrations differed in different experimental stages. Li et al. (2012) found that TVOC concentration in the environmental chamber emitted by interior wall paint and other wet materials increased with temperature. Wen (2015) tested the concentration variations of TVOC emitted from a wood lacquer and interior wall latex paint at 18 °C, 23 °C and 28 °C. They found that the emission rate decreased at higher temperature.