

Project 19/2004 – Source Characterization of Formaldehyde and Volatile Organic Compounds in Indoor Environments

Purpose

This paper seeks Members' advice in funding the captioned application for ECF made by the Hong Kong Polytechnic University.

Background

2. The funding requested by this project is \$699,680.00 for the expenses on employing one Research Associate (\$319,680.00) and general expenses (\$380,000.00) on GC columns, cartridge and ozone scrubber, filters, VOC standard gas and other consumables. The project is expected to last for 18 months.

3. The objectives of this project are:

- To characterize volatile organic compounds (VOCs) and formaldehyde emissions from the building materials, furniture and Environmental Tobacco Smoke (ETS) using a large environmental chamber;
- To investigate emissions of formaldehyde from the wooden materials, solvent, painting and etc. by a microchamber;
- To quantify VOCs and formaldehyde emissions from 20 - 25 types of building materials, 8 - 10 types of furniture and 3 brands of cigarette which are popular on Hong Kong; and
- To compare the emissions data with VOCs and formaldehyde emission standard.

4. The research team will establish sampling procedure and detailed analysis of VOCs and formaldehyde. After detailed investigation of emissions of formaldehyde and VOCs from these materials, basic database could be established. The indoor air quality will then be classified and grouped. According to the principal investigator (PI), the database is useful for EPD and the pollution control equipment manufacturers to develop effective air pollution control equipment.

5. The proposal was examined by EPD and two external expert assessors. Assessor 1 considered the proposal not worthy of support, not

focused and there have been many studies of indoor VOCs, risk assessment to indoor VOCs, and characterization of VOC emissions in an environmental chamber. No model was developed from this proposal.

6. Assessor 2 considered that it is not worthy to support the Tobacco Smoke investigation as the general policy should be to ban smoking in indoor environment. In view of the fact that research in indoor air quality has been under-supported in Hong Kong and most other countries, Assessor 2 considered that the project should be supported in general because the measurement of emission characteristics of typical building materials in Hong Kong will be useful. Nevertheless, Assessor 2 also cautioned that there might be duplication with consultancy project carried out by EPD and various universities in the past and thus advised that the study should focus on emission data of building materials and furniture.

7. EPD pointed out that the objectives and methodology adopted are very similar to one ECF project previously conducted by the PI, except that the size of the environmental chambers used differs. The only new area is the inclusion of the effect of ETS on Indoor Air Quality which has been studied extensively by others. As such, EPD considered the application not worthy of support.

Advice sought

8. Members are invited to advise whether the application for ECF should be supported as detailed in paragraphs 2 to 4 above.

Secretariat, ECF Research Projects Vetting Subcommittee
January 2005