

Project 09/2005 – Development of a novel and low-cost membrane bioreactor (MBR) for treating Hong Kong village sewage

Purpose

This paper seeks Members' advice on funding the captioned application for ECF submitted by The Hong Kong University of Science & Technology.

Background

2. The funding requested by this project is \$818,685 for the staff cost of employing two Research Assistants for 12 months (\$372,000) and 12 student helpers for the sampling work (\$43,200), the equipment cost for the pilot plant (\$249,000), the traveling expenses for the site visits and sample delivery (\$33,500), the consumables cost (\$82,000) and contingency (\$38,985). The project is expected to last for 12 months.

3. The principal investigator (PI) proposes to develop a novel and low-cost MBR system for treating village sewage by using recycled non-woven materials as the membrane. The use of cheap membrane built from recycled non-woven materials with normal aeration strength enables development of an inexpensive, easy-to-operate, low-cost and small-scale MBR system suitable for use in village developments in Hong Kong. The PI pointed out that the energy consumption of the proposed MBR would be much lower than existing MBR system.

4. The proposal had been examined by the Environmental Protection Department (EPD) and two overseas expert assessors. All of them supported the project as it proposed using recycled non-woven materials for productive purposes and to reduce costs of the treatment process. If the experiments confirmed the usefulness of the proposed scheme, there would be drastic improvement of wastewater treatment in suburban and rural areas in Hong Kong. The ECF Research Projects Vetting Subcommittee (RPVSC) discussed the proposal at its meeting on 23.8.2006 and considered it worthy of support in principle but requested further clarification from the PI on the issue of patent for the project deliverables. The PI subsequently confirmed in writing that he had no intention to apply for patent for the MBR developed in the project and he was

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willing to share the project results and allowed others to use the developed technology free of charge. Members of the RPVSC thereafter supported the proposal by circulation with an approved budget of \$818,685.

Advice sought

5. Members are invited to advise whether the application for ECF should be approved with a grant of \$818,685 as detailed in paragraphs 2 to 4 above.

**Secretariat, ECF Research Projects Vetting Subcommittee
September 2006**