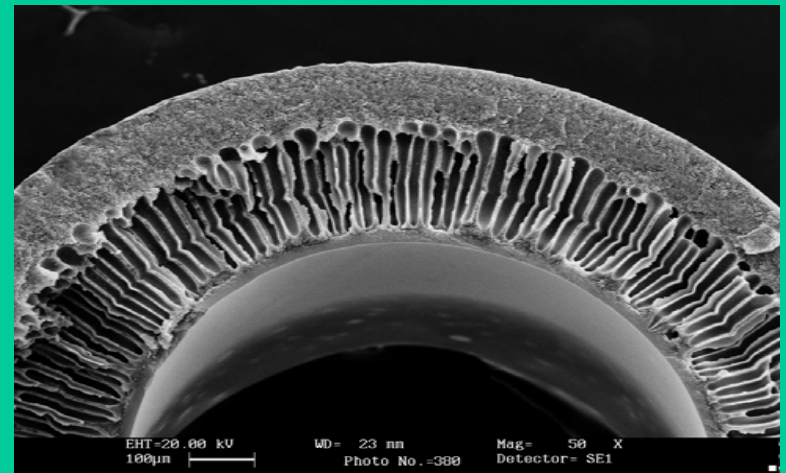
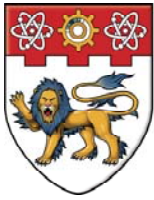


Research on use of membranes for a sustainable water supply through water reclamation from domestic and industrial wastewater and protection of the environment





RO desalination and reclamation - control of fouling

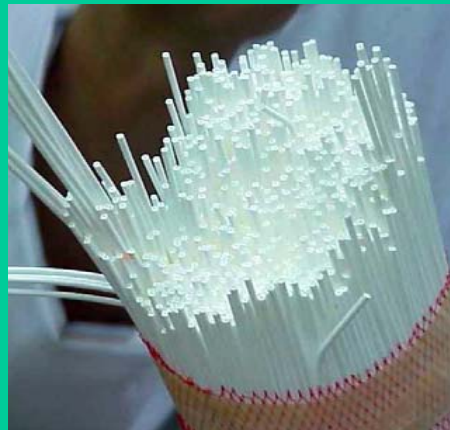
- Study biofouling and flux/mass transfer relationship
- Develop in-situ, non invasive fouling monitors - ultrasonic time domain reflectometry (UTDR) and optical fiber biosensor

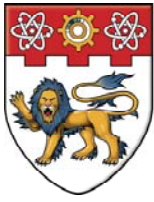
Development of novel hybrid photocatalytic-membrane reactor

- Combines membrane and photocatalysis in reactor to remove trace organics

NOM and contaminant removal by UF: membrane & module development

- Improve rejection of NOM & reduce fouling tendency via membrane surface modification by electrophoresis-UV grafting





Nano-structure material for membrane fouling control

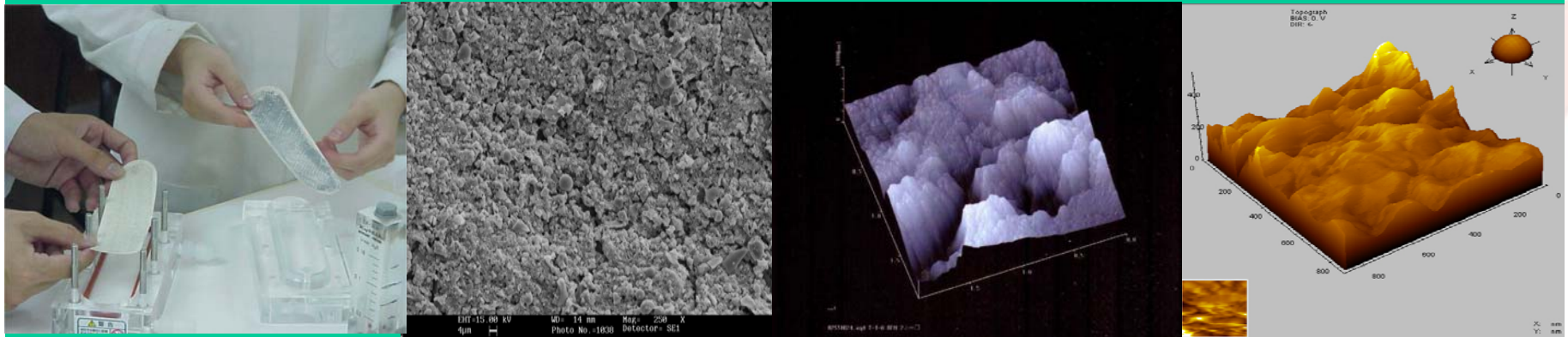
- Engineering design and fabricate the nano-structured material
- Engineering design an integrated membrane reactor

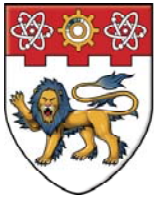
Biofilm prevention in membrane bioreactor

- Prolonged sludge retention time

Nano-filtration membrane fouling

- Study the tri-valent ion fouling mechanism & reduce fouling tendency





Prologed Sludge Retention Membrane Bioreactor

- Converting wastewater into clean water and minimized sludge production for **Desalination Water Treatment System**

- Converting seawater into potable water

Integrated Photocatalytic Oxidation Membrane Reactor

- Increase of membrane life span and production rate and removal of toxic and hazardous organic chemicals from water



Membrane Photocatalytic
Oxidation System



UF/RO/UV
Water Reclamation System



Membrane Bioreactor
Water Reclamation System

NTU Portable Water Treatment Unit For Tsunami Relief

Nanyang
Technological University

LIHWE DAO, SATURDAY, 12 FEBRUARY 2005, PAGE 13

南大学生襄义举 净水系统捐灾民



南洋理工大学土木与环境工程学院研究生许瑞定（左起）、廖静仪和夏善德参与研制供水回收及净化系统。

南洋理工大学土木与环境工程学院研究生利用水供回收及净化科技，为海啸灾民提供干净食水。

他们捐赠一套流动水供回收及净化系统，及10个小型薄膜抽滤器

且给严重缺乏净水的灾民。

水供回收及净化系统是南大研究生在1999年研发的系统，利用不同薄膜科技过滤出高质量食水。这台机器每天

可提供7万5000公升食水，满足3万多人需求。小型薄膜抽滤器每台天可提供5500公升食水。

南大已向参与赈灾的相组织提供抽滤机器的建议。必要

时学生也将到灾区搭建系统，并教导当地人使用。

南大合作伙伴之一裕隆国际 (Jurong International) 捐5000元作为制作系统的部分开

销。

这是配合南大 Operation Moving Hearts 筹款活动的计划。这项计划为海啸灾民筹得10万元。