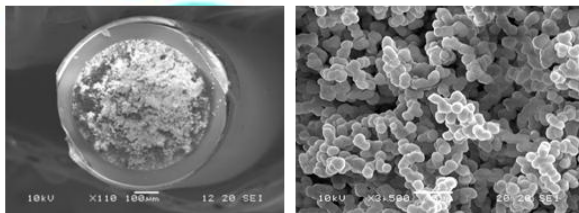


# Assoc. Prof. Dr. Orapin Chienthavorn



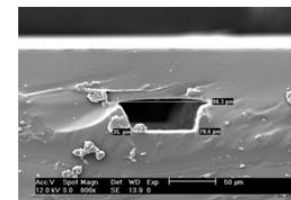
## Separation and extraction:

### Monolithic column



Monolithic column is a single skeleton of interconnected microglobules with flow through pores and high surface area. The materials are generally based on silica or polymer containing in a column or planar format. Synthesis of the material is via sol-gel and/or in situ polymerisation.

In our works monolith column has been synthesised in several molds, e.g. column, channel, and capillary, and utilised in adsorption, chromatography and microfluidic device. The main benefits of such materials are reduction in scale of analytical equipments, thus minimising solvent consumption for extraction and chromatography, as well as improving efficiency of separation methods.



Several applications of the monolith that have been successful in our laboratory are adsorption of pesticides from honey, cleaning-up of fat from nitrosamine extraction from meat product, separation of riboflavin, amines, and chlorpheniramine from pharmaceutical tablets.

Our goal is to synthesise monolith in several formats for the purpose of extraction and separation. The products from our laboratory has been successfully applied to the environmental field, proving real applicable techniques.

### Selected Publications:

Chienthavorn, O. et al., Purge and Trap with Monolithic Sorbent for Gas Chromatographic Analysis of Pesticides in Honey, *Anal. Bioanal. Chem.*, 402 (2012) 955-964.

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## 1. Chemical food safety

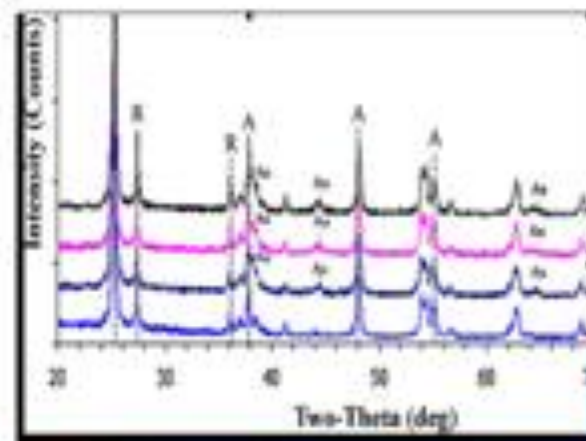
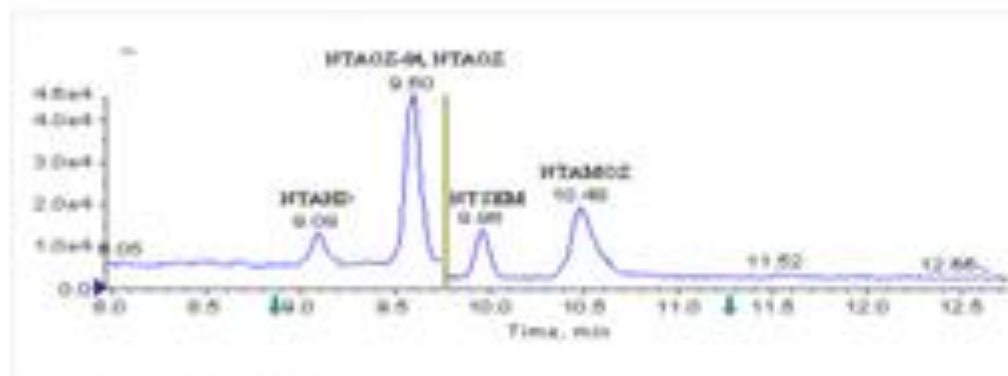
The use of LC - tandem mass spectrometry in method development for prohibited organic residues in food samples and the development of selective molecularly imprinting technology for sorbents of some antibacteria and acaricides.

## 2. Chemical detector tube for analytes of environmental interest

Chemical detectors based on the colour change of new metal complexes when toxic gases drawn through are being performed. Various spectroscopic methods including XANES, EXAFS are used to elucidate the mechanism of reactions.

## 3. Photocatalysis of some pesticides

Kinetic studies and degradation pathway of photocatalysis of some pesticides in surface water containing natural organic matters using photocatalyst under simulating solar light are being conducted



# Dr. Tharinee Saleepochn



Develop multiresidue method for trace analysis of pesticides and their metabolites in environmental sample by gas and liquid chromatography/tandem mass spectrometry

## Studied Pesticide



Insecticide



Fungicide



Acaricide



Herbicide



Rodenticide

Liquid Chromatography  
Gas Chromatography

Separation of compounds



Mass spectrometry

Analysis and Identification  
of each compounds.

Department of Chemistry