Remediation Laboratory

Remediation laboratory involves researches in 3 areas as follows:
- Development of adsorbents from agricultural wastes for treatment of wastewater containing organic substances and heavy metals/recovery of value metals.
- Phytoremediation of wastewater/soil contaminated with heavy metals and organic substances by local Thai plant.
- Removal of color from food industry by local materials.
Our laboratory are concerned to prepare the cheap, specific and high capacity adsorbents for serving wastewater treatment by adsorption process, which is an alternative way to eliminate all of heavy metals, organic substances and highly soluble dyes. Accordingly, agricultural wastes (i.e. corncob, coir pith, shrimp shell, macadamia nut-shell, and rice husk) are appropriate to be the raw materials for preparing the special adsorbents for heavy metals, organic substances and dyestuffs. Lab scale and pilot plant are regularly tested and studied to obtain the essential parameters for supporting the operation.
Nowadays, technology for printing wastewater treatment was developed by remediation laboratory. For example, wastewater treatment of off-set, flexography and screen printing from printing industry as shown in Fig. 1.

Factories which use our wastewater treatment plant

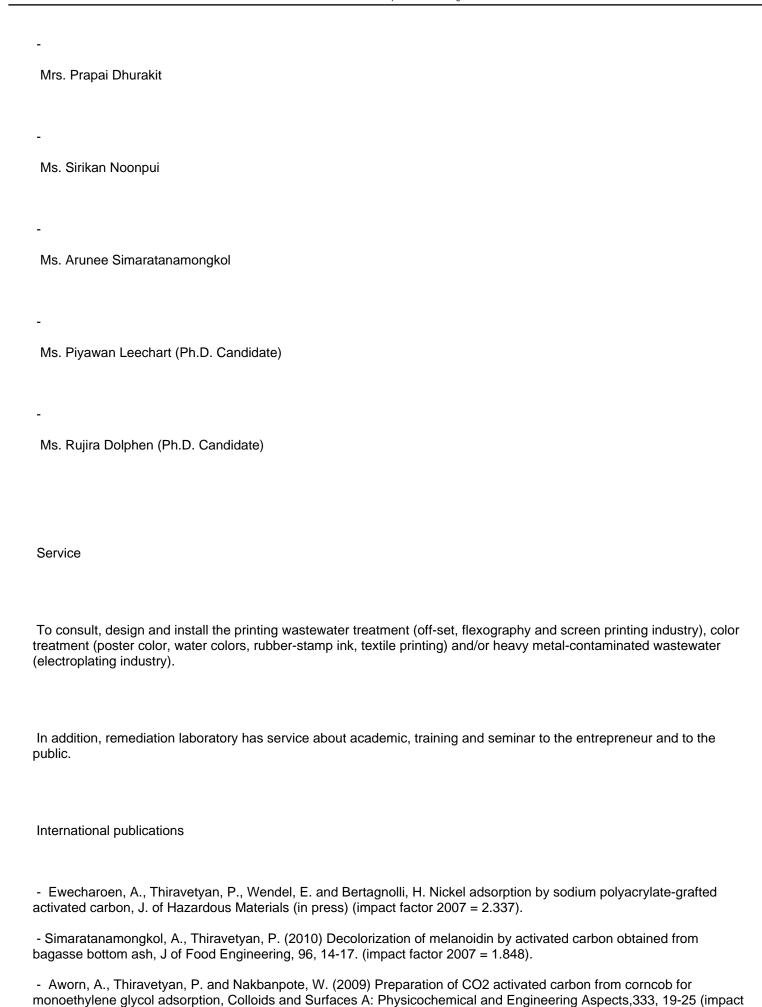
For example, factories which use our method for wastewater treatment

Fig. 1 Wastewater treatment of off-set, flexography and screen printing from printing industry

Remediation laboratory also emphasized on phytoremediation of wastewater/soil containing heavy metals and organic substances by local Thai plants. In addition, we are selecting the possibility plants that have maximum removal capacity

and study on the mechanism of toxic substances uptake by hyperaccumulative plant.
In addition, the research on color removal from food industry by local materials is also studied. The aim is to develop our technology suitable in Thailand.
Objective
- To develop the adsorbents from agricultural wastes for treatment of wastewater containing heavy metals and organic substances/recovery of value metals
- To study on phytoremediation of wastewater/soil contaminated with heavy metals and organic substances by local Thai plants.
- To study on color removal from food industry by local materials.
- To create the efficiency of wastewater treatment plant and transfer the technology to the industry.
Research areas:
Development of adsorbents from agricultural wastes for treatment of wastewater contaminated with heavy metal and organic substances/color
- Treatment of bisphenol A from drink water by bagasse fly ash
Recovery of nickel and chromium from electroplating wastewater by coir pith
Phytoremediation of wastewater/soil contaminated with heavy metals and organic substances/color by local Thai Plants

Treatment of synthetic reactive dye wastewater by narrow-leaved cattail
Phytoremediation of cadmium-contaminated soil by Nut grass
Construction wetland of ethylene glycol-contaminated wastewater by Burhead and Cyperus textilis
Removal of color from food industry by local materials
Decolorization of sugar syrup by bagasse fly ash/ bagasse fly ash activated carbon
- Adsorption of melanoidin by nanochitin
Decolorization of rice bran oil by kaolinite
Staffs
- Assoc. Prof. Dr. Paitip Thiravetyan
Dr. Parinda Suksabye



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More information, please call 02-470-7536-7