

**Title :** Hydrogeochemistry and Fluoride Contamination at Mae Tha Fault, Doi Saket and San Kamphaeng District, Chiang Mai Province

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 Cooperative Education (กรณี นำเสนอผลงานสหกิจศึกษา)

## ABSTRACT

Fluoride contamination in groundwater is a significant public health concern, particularly in areas with complex geological structures such as the Mae Tha Fault zone in Doi Saket and San Kamphaeng districts, Chiang Mai province. In these areas, the groundwater often contains higher fluoride content than normal level, due to the dissolution of fluoride-bearing minerals in subsurface rock formations. If fluoride levels exceed the World Health Organization (WHO) guideline of 1.5 mg/L, it may lead to adverse health effects such as dental fluorosis, skeletal fluorosis, and impaired cognitive development in children. This study aims to examine the fluoride content in groundwater along the Mae Tha fault zone and to assess the health impacts from the fluoride levels found in the groundwater. Twenty of water samples were collected and physical properties of the water were recorded in the field, including temperature, pH, and electrical conductivity. The samples were then analyzed for their chemical properties in the laboratory, including turbidity, carbonate and bicarbonate levels, total dissolved solids, fluoride concentration, and cation

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analysis. The study found that fluoride contamination levels exceeding the standard in two wells in southeastern Doi Saket, and two wells in the middle of San Kamphaeng district as well. The health risk assessment of these groundwater sources indicated potential health risks, particularly for children aged under 6 years and adults aged over 70 years. This study will help us to understand the geological factors influencing fluoride contamination in groundwater and to assess the health impacts on the local population effectively.

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## Title name guide.

ADVISOR title name / แปลไทย	
Professor Dr.	ศาสตราจารย์ ดร.
Professor	ศาสตราจารย์
Associate Professor Dr.	รองศาสตราจารย์ ดร.
Associate Professor	รองศาสตราจารย์
Assistant Professor Dr.	ผู้ช่วยศาสตราจารย์ ดร.
Assistant Professor	ผู้ช่วยศาสตราจารย์
Dr.	ดร.
Lecturer	อาจารย์
Mrs.	นาง
Ms.	นางสาว
Mr.	นาย

## Major name guide.

SCIENCE MAJOR name / แปล	
Biology	ชีววิทยา
Microbiology	จุลชีววิทยา
Zoology	สัตววิทยา
Biochemistry and Biochemical Technology or Biochemistry and Biochemical Innovation	ชีวเคมีและชีวเคมีเทคโนโลยี หรือ ชีวเคมีและชีวเคมีนวัตกรรม
Chemistry	เคมี
Industrial Chemistry	เคมีอุตสาหกรรม
Materials Science	วัสดุศาสตร์
Physics	ฟิสิกส์
Computer Science	วิทยาการคอมพิวเตอร์
Data Science	วิทยาการข้อมูล
Mathematics	คณิตศาสตร์
Statistics	สถิติ

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Gemology	อัญมณีวิทยา
Geology	ธรณีวิทยา
Environmental Science	วิทยาศาสตร์สิ่งแวดล้อม

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