

**Title :** 2D Electrical Resistivity Survey for Detecting Shallow Subsurface Geologic Structure in Nong Han Subdistrict, San Sai District, Chiang Mai Province

**Author(s) :** 1. Chayanut Deelom

**Student ID :** 640510419

**Major :** Geology

**Advisor(s) :** 1. Assistant Professor Dr. Suwimon Udphuay

**Type of Presentation\*** (*choose 1*):  **Oral Presentation** (เฉพาะ ตัวแทนค.ที่สาขาเลือกให้นำเสนอแบบบรรยาย)  
 **Poster** (กรณี นำเสนอผลงานปัญหาพิเศษ/การค้นคว้าอิสระ)  
 **Cooperative Education** (กรณี นำเสนอผลงานสหกิจศึกษา)

## ABSTRACT

This study utilized a 2D Electrical Resistivity Survey to investigate the shallow subsurface geologic structure in Tambon Nong Han, San Sai District, Chiang Mai Province. The survey lines were positioned perpendicular to a fault interpreted from satellite imagery, which trends northwest-southeast. The identification of this fault through remote sensing is significant, as it suggests a previously unconfirmed structural feature that may influence local groundwater flow and seismic activity. A dipole-dipole electrode configuration was employed, with 4 survey lines conducted. One survey line extended 1,000 meters with a 5-meter electrode spacing, while the remaining three were each 400 meters long with the same spacing. Data processing was performed using AGI EarthImager™ 2D software to generate cross-sectional resistivity profiles. The results revealed anomalies along all four survey lines, indicating fault zones characterized by discontinuities in the subsurface geology. Additionally, low-resistivity zones were observed, suggesting the presence of groundwater or fluids along the fault, which further supports its structural significance. The subsurface structure was interpreted as consisting of three main sedimentary layers. The upper layer exhibited very low resistivity, likely corresponding to saturated clay deposits. The middle layer showed high resistivity, interpreted as gravel, while the lower layer had low resistivity again, suggesting clay-rich sediments. These findings confirm the presence of fault structures beneath the sediment and highlight the effectiveness of integrating satellite imagery with geophysical surveys for structural interpretation. This approach provides valuable insights into the shallow subsurface, contributing to a more accurate geological understanding of the study area.