Title : Titanium Thin Films Deposited by Cathodic Vacuum Arc

Author(s) :
1. Weerapamas Fongchansom — **Student ID :** 650510396
2. **Student ID :**
3. **Student ID :**

Major : Physics

Advisor(s) :
1. Assistant Professor Dr. Sakon Sansongsiri
2.
3.

Type of presentation* *(choose 1)* **:**
- ☐ **Oral Presentation** (เฉพาะ ตัวแทนนศ.ที่สาขาเลือกให้นำเสนอแบบบรรยาย)
- ☑ **Poster** (กรณี นำเสนอผลงานปัญหาพิเศษ/การค้นคว้าอิสระ)
- ☐ **Cooperative Education** (กรณี นำเสนอผลงานสหกิจศึกษา)

ABSTRACT

The Cathodic vacuum arc technique is a plasma coating method that has garnered interest in the field of electronic films. This is due to its capability to transform solid-state metals into plasma, which can be used to coat desired materials. This independent study focusses on the preparation of titanium thin films using the cathodic vacuum arc technique at a pressure of 2×10^{-2} Torr, with a negative voltage of 230 volts applied to the tip of a titanium rod. The plasma was deposited onto a glass substrate measuring 2×2 centimeters, positioned 7 centimeters from the cathode tip, which is the opposite end of the titanium rod. A range of pulse numbers was used, specifically 0, 5, 10, 15, and 20 pulses. The composition of the plasma was analyzed using Optical Emission Spectroscopy (OES), which revealed significant peaks at wavelengths of 376.72 and 334.77 nanometers, indicating that the plasma vapor generated within the chamber is titanium. Additionally, when comparing the transparency of the thin films on the glass substrate with the naked eye, it was observed that the transparency decreased as the number of pulses used in the coating increased.

**Type of presentation must be matched with an option you choosing on student upload system.*

***The abstract can be more than one page and must be approved by project advisor before upload.*