1. 概要（Summary）

The aim of this project is to fabricated ultra-clean carbon nanotube (CNT) devices for single CNT THz spectroscopy experiments. The growth of the CNT is performed at the end of process at 900°C on a pre-patterned Silicon chip with Ti/Pt contact. The step of Ti/Pt deposition is made at Takeda cleanroom

2. 実験（Experimental）

【利用した主な装置】

LL 式高密度汎用スパッタリング装置

【実験方法(experimental method)】

For the electrical contact of CNTs, the deposition recipe used is the number 14: an Ar plasma for 10s at 100W followed by a Ti deposition for 60 s at 200 W and then the Pt deposition for 300 s at 200 W. Targeting 10 nm of Ti and 50 nm of Pt.

3. 結果と考察（Results and Discussion）

Thanks to the Takeda cleanroom facility, we could perform Ti/Pt deposition, which are crucial for our project. Figure 1 shows an Ti/Pt electrodes before the CNT growth. And the Figure 2 the same electrode after the growth with a suspended CNT between them.

The first results are very encouraging, the Ti/Pt electrodes are still good after the growth. We succeed to have one Carbon Nanotube contacted. But unfortunately there was a shortcut because the SiO_x oxide we deposited was leaking so we couldn't

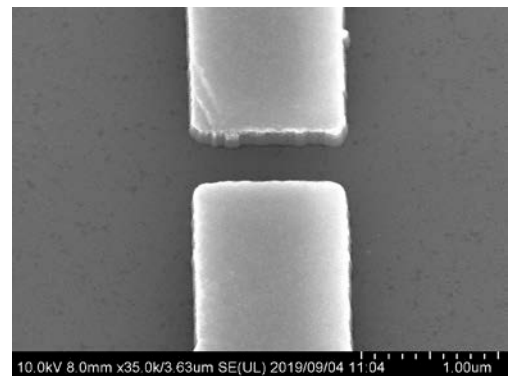perform any experiments with those sample. It is still an ongoing work.

Fig. 1 SEM image of the Pt nanogap electrode fabricated on a sputtered SiO_2 layer.
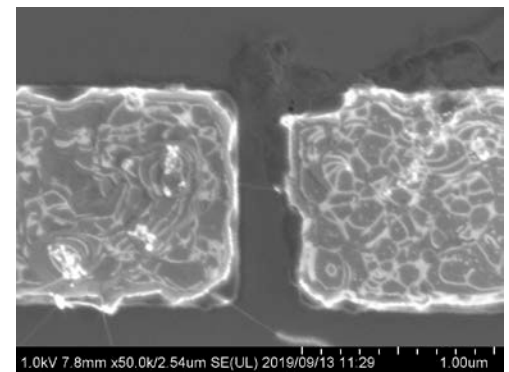

Fig. 2 SEM image of the junction after CNTs were grown. A single CNT bridges the 2 electrodes.

4. その他・特記事項（Others）

なし

5. 論文・学会発表（Publication/Presentation）

なし

6. 関連特許（Patent）

なし