

# 面状発熱体

## Surface heating element

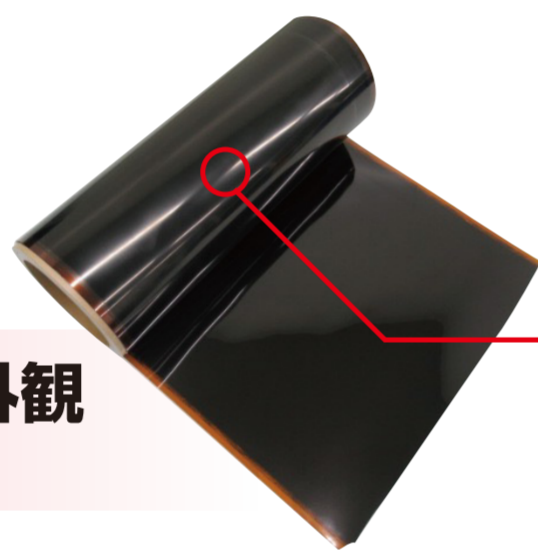
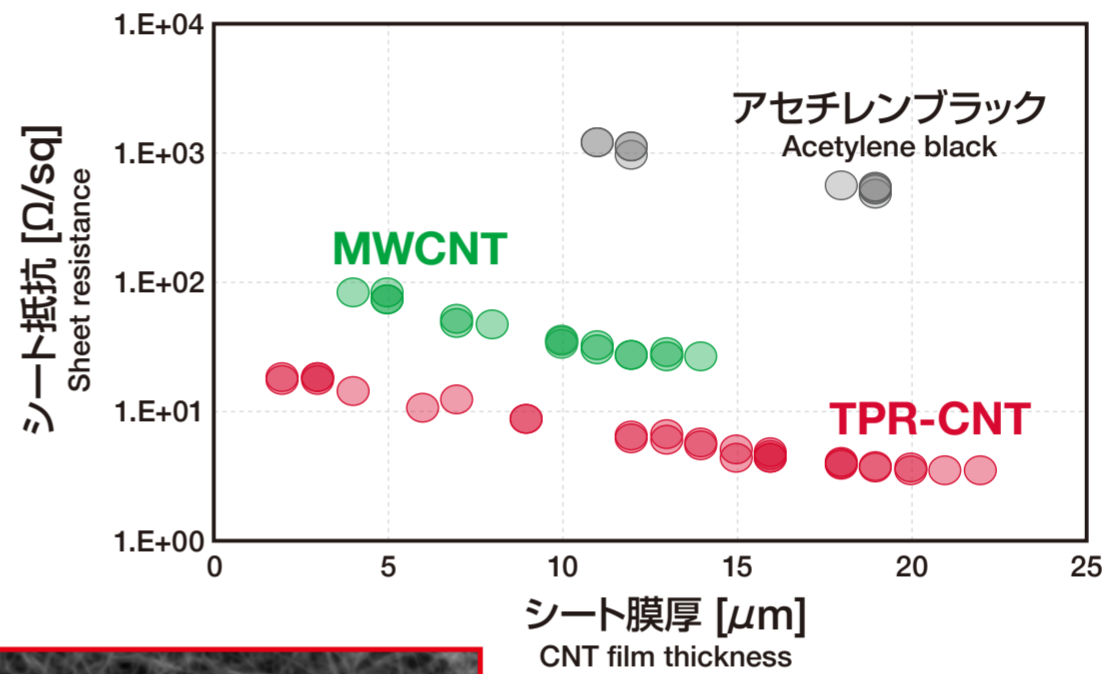
### カーボンナノチューブ (CNT) 分散液を 基材上に塗工し、CNTフィルムを形成

CNT film is formed by applying carbon nanotube (CNT) dispersion onto the substrate

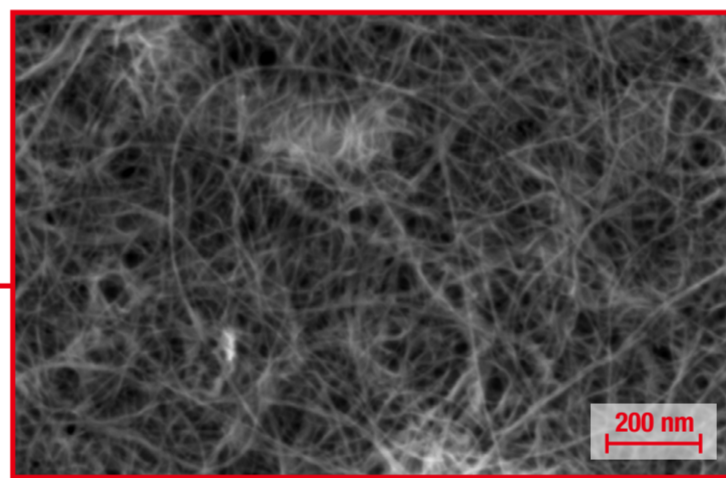
#### 特徴 | Characteristics

- 低抵抗なCNTフィルム  
Low resistance
- CNTが面内でランダムに分散  
Well-dispersed CNT
- 柔軟で屈曲時に抵抗変化しない  
Flexible

#### カーボン塗工膜の表面抵抗比較 Comparison of sheet resistance



CNTフィルム外観  
CNT film appearance

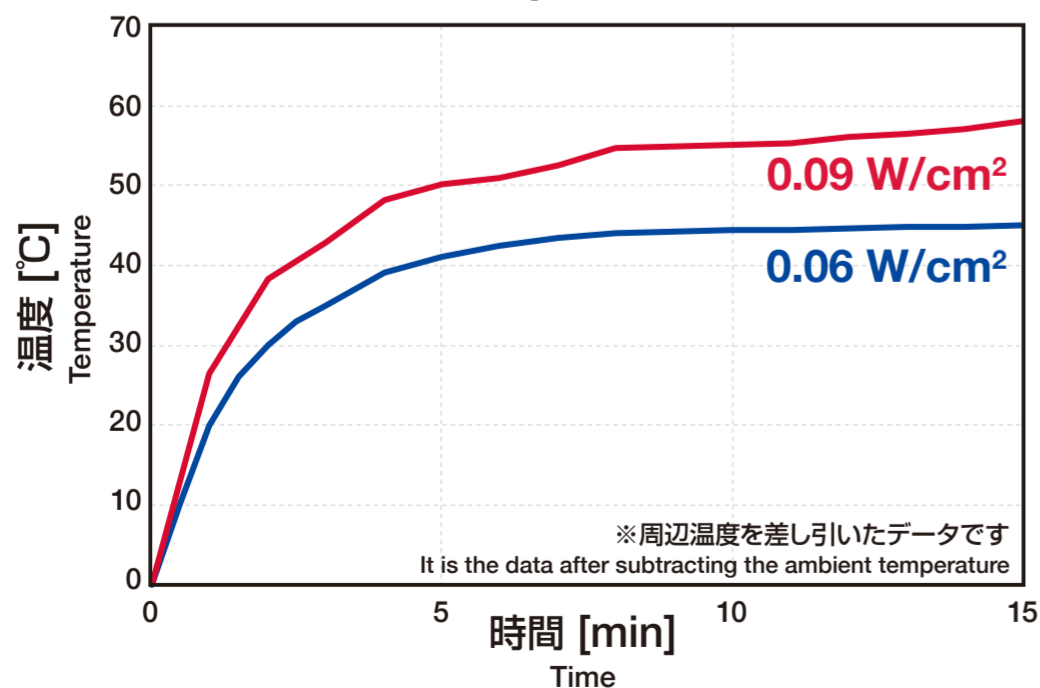


CNTフィルム表面のSEM像  
SEM image of CNT film

#### 用途: 面状発熱体 | Applications: Surface heating elements

- 面全体で均一に発熱  
Heat generation uniformly on a surface
- 早い昇温/降温特性  
Rapid rise and fall
- 薄膜で柔軟性のある発熱体  
Thin and flexible heating element

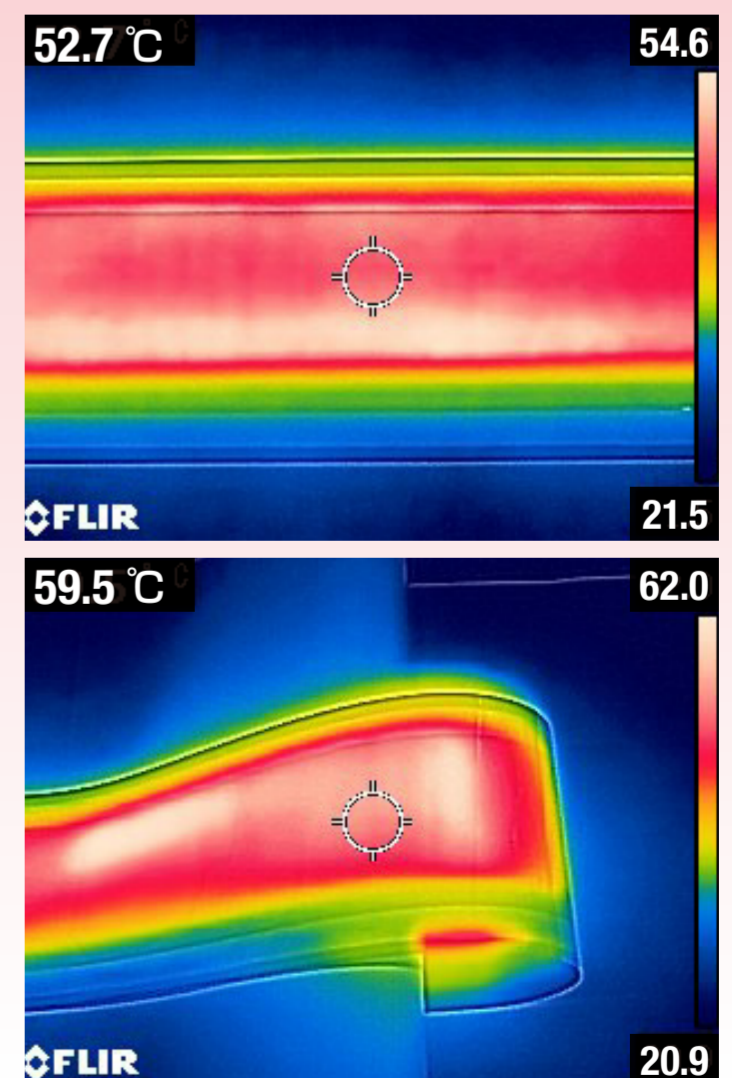
#### 昇温特性 Heater performance



#### ヒーター外観 Appearance of heater



#### 発熱の様子 Heating Condition



本発熱体は、株式会社 樫の木製作所との共同試作品です  
This heating element was developed in collaboration with Oak-trees INC