

## Specification of PbSnTe-Based Thermoelectric Ingot

### Description

The PbSnTe-based thermoelectric ingot is grown by the Thermonamic with the alloy of Pb, Te, Sn and others, and our unique crystallizing processes. The Lead Telluride thermoelectric ingot is used to fabricate the modules for power generation, good for converting 500 ~ 800 K heat sources into electricity. The peak of dimensionless figure of merit ( $ZT$ ) of our P-type and N-type ingots is larger than 0.9 and 1.2 around 700 K respectively, making them good for waste heat recovery. Meanwhile, our ingot is featured with good mechanical strength and highly stable property, providing the key elements for producing the high performance and reliable power generation modules used for middle temperature range heat sources.

### Features

- Silver-white Color
- P-Type and N-Type ingot  $ZT \geq 0.9$  and  $1.2$  @ 700 K respectively

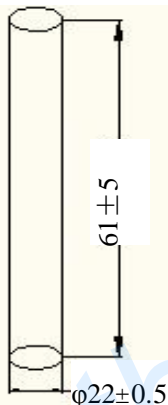
### Application

- High performance and reliable power generation modules

### Performance Specification Sheet

Performance Specification	P-Type	N-Type	Note
Part Number	TIG-PbTe-P-1	TIG-PbTe-N-1	
Diameter (mm)	$22 \pm 0.5$	$22 \pm 0.5$	
Length (mm)	$61 \pm 5$	$61 \pm 5$	
Electrical Conductivity $\sigma$ ( $10^2 \text{Sm}^{-1}$ )	900 ~ 1200	1900 ~ 2300	300 K
Seebeck Coefficient $\alpha$ ( $\mu\text{VK}^{-1}$ )	100 ~ 180	100 ~ 210	350 ~ 800 K
Thermal Conductivity ( $\text{Wm}^{-1}\text{K}^{-1}$ )	1.1 ~ 2	1.7 ~ 3	300 ~ 800 K
Power Factor $P$ ( $\text{WmK}^{-2}$ )	$\geq 0.0018$	$\geq 0.003$	700 K
Peak Dimensionless $ZT$ value	$\geq 0.9$	$\geq 1.2$	700 K

### Geometric Characteristics (in millimeters)

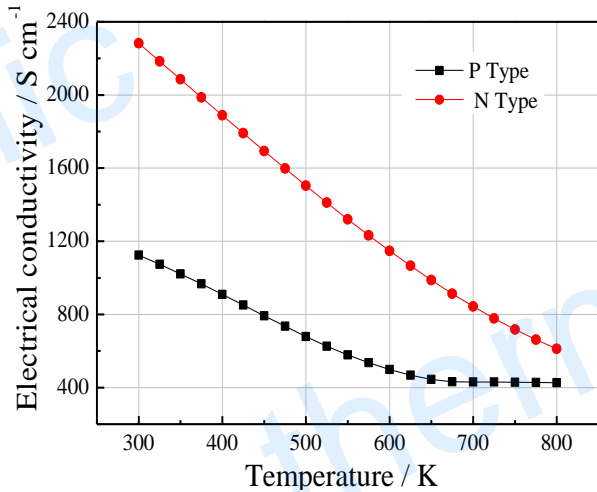


P-type Ingot

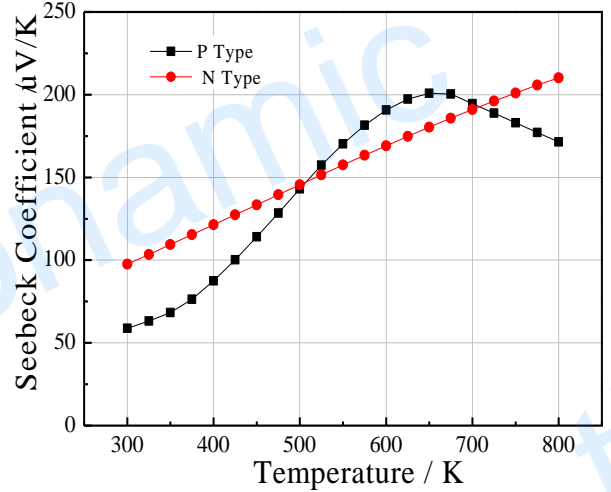


N-type Ingot

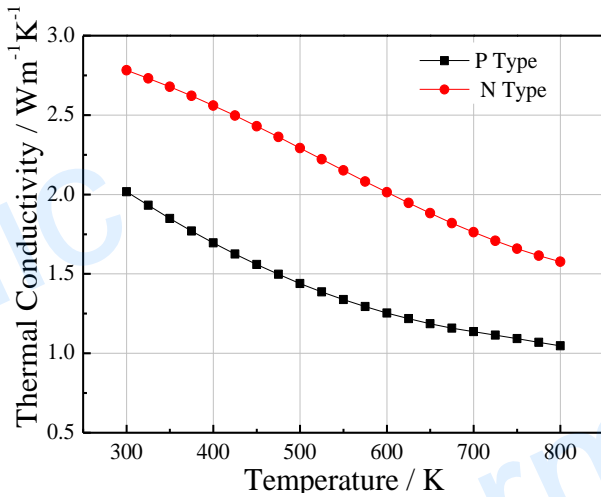
## Specification of PbSnTe -Based Thermoelectric Ingot



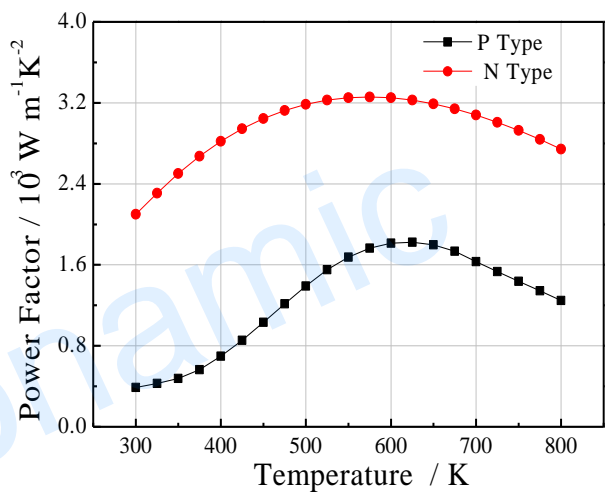
Electrical conductivity of the PbSnTe-based ingot



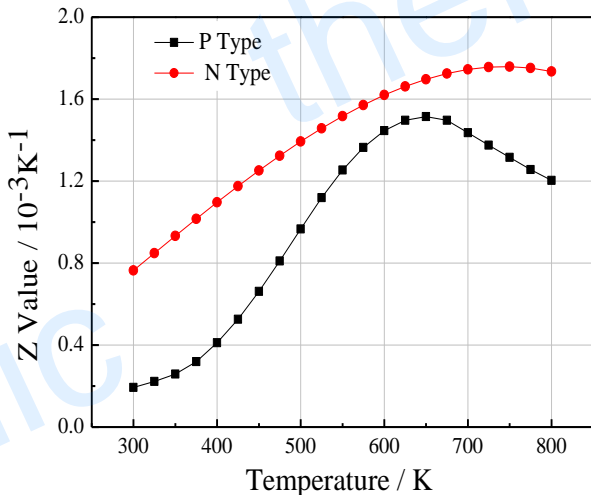
Seebeck coefficients of the PbSnTe-based ingot



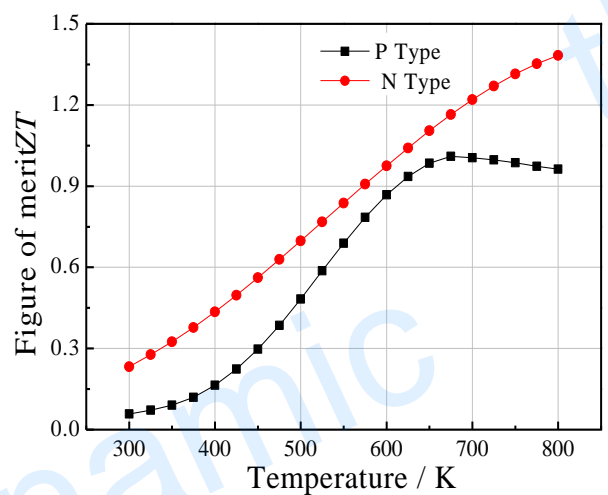
Thermal conductivity of the PbSnTe-based ingot



Power factors of the PbSnTe-based ingot



Z values of the PbSnTe-based ingot



ZT values of the PbSnTe-based ingot

### Operation Cautions

- Caution on handling
- Storage in dry environment

### Remarks:

All measurements are performed in the temperature range from 300 to 800 K.

Creative technology with fine manufacturing processes provides you the reliable and quality products.

Tel: +86-791-88198288 Fax: +86-791-88198308 Email: [sales@thermonamic.com.cn](mailto:sales@thermonamic.com.cn) Web Site: [www.thermonamic.com.cn](http://www.thermonamic.com.cn)