

# Crystal growth of sulfide compound crystals

Keywords: Sulfide compound crystal, Crystal growth, SnS, AgBiS<sub>2</sub>

Masaru Nakamura

Optical Materials Field / Optical Single Crystals Group

NAKAMURA.Masaru@nims.go.jp | [https://samurai.nims.go.jp/profiles/nakamura\\_masaru](https://samurai.nims.go.jp/profiles/nakamura_masaru)



## Background

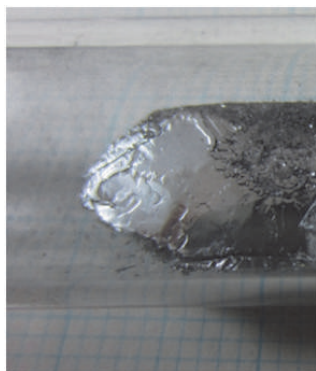
- Recently, sulfide compounds have been attractive materials.
- Sulfide compounds are in wide variety for applied materials such as thermoelectric materials, nonlinear optical materials, photoelectric materials, phosphors, next-generation solar cell materials, infrared sensor materials.

## Aim

- To investigate intrinsic physical properties, single crystals are needed.
- We have tried to grow sulfide compound crystals and characterized grown crystals. Then we would like to show the way of application using these sulfide compound crystals.

## Advanced Research Topics

Grown sulfide compound single crystals



Grown SnS single crystal



Grown AgBiS<sub>2</sub> single crystal

## Publications

- M. Nakamura, H. Nakamura, M. Imura, S. Otani, K. Shimamura, N. Ohashi, J. Alloys Compd. **591** (2014) 326.
- M. Nakamura, H. Nakamura, T. Ohsawa, M. Imura, K. Shimamura, N. Ohashi, J. Crystal Growth. **411** (2015) 1.

## Summary

- SnS single crystal was successfully grown.
- AgBiS<sub>2</sub> single crystal was successfully grown.

## Research outcome

- Application for next-generation solar cell
- Application for thermoelectric device