



# Advanced Thermal-Fluids Measurement

## 2<sup>nd</sup> Part

- Lecturer
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- Class schedule
  - January 9: Invasive temp. measurement
    - Thermocouples, Resistance temperature detectors
  - January 16: Semi-/Non-invasive temp. measurement
    - Thermochromic liquid, Infrared thermometry
  - January 23: Other temp. measurements and application
    - Use of refractive index and interferometer, Heat flux sensor
  - January 30: Thermal property measurements
    - Physical property measurement, Heat transfer control in polymer processing
- Reference
  - Practical Temperature Measurement by Peter R. N. Childs, Butterworth-Heinemann (2001)
  - Heat Transfer (10<sup>th</sup>) by Jack P. Holman, McGraw-Hill Companies (2009)





# Today's contents

- Brief lecture guide of 2<sup>nd</sup> part
- Definition of temperature measurement
- Temperature measurement technique
  - Actual circumstances
  - Thermocouples
    - Analysis and knowledge for actual use
  - Resistance temperature detectors
    - Its characteristics and knowledge for actual use
- Small problems for the temperature measurement

