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Sensors and Measurement Systems, Second Edition

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Sensors and measurement systems is an introduction to microsensors for engineering students in the final undergraduate or early graduate level, technicians who wants to know more about the systems they are using, and anybody curious enough to know what microsystems and microsensors can do.

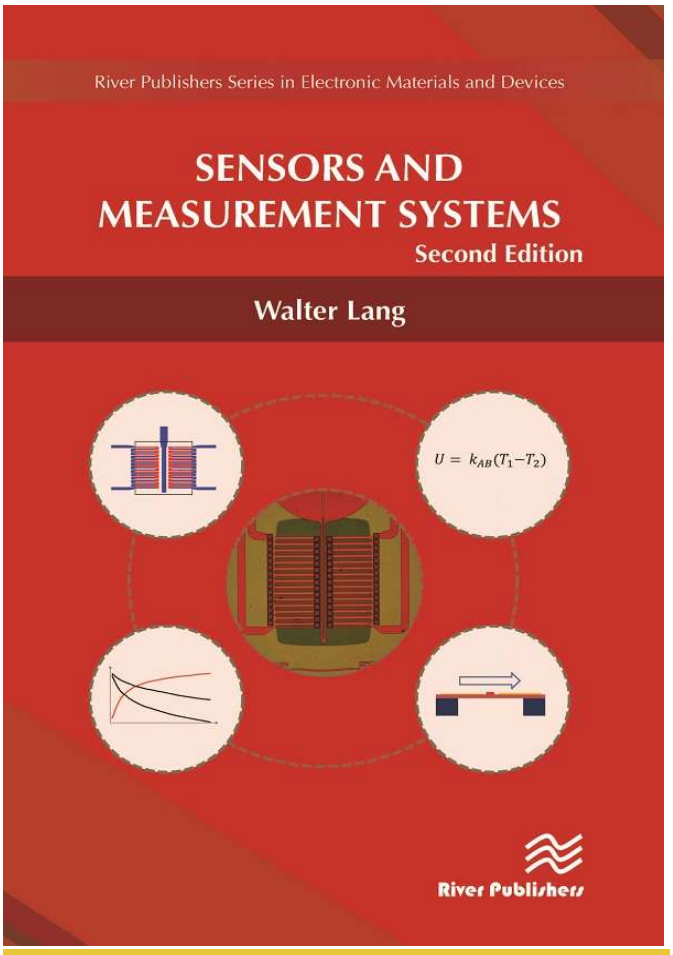
The book discusses five families of sensors:

- Thermal sensors
- Force and pressure sensors
- Inertial sensors
- Magnetic field sensors
- Flow sensors

For each sensor, theoretical, technology and application aspects are examined. The sensor function is modelled to understand sensitivity, resolution and noise. We ask ourselves: What do we want to measure? What are possible applications? How are the sensor chips made in the cleanroom? How are they mounted and integrated in a system?

After reading this book, you should be able to:

- Understand important thermal, mechanical, inertial and magnetic sensors
- Work with characterization parameters for sensors
- Choose sensors for a given application and apply them
- Understand micromachining technologies for sensors



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Sensors; microsystems; MEMS; thermopile; pressure sensor; accelerometer; angular rate sensor; microgyroscope; thermal flow sensor

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