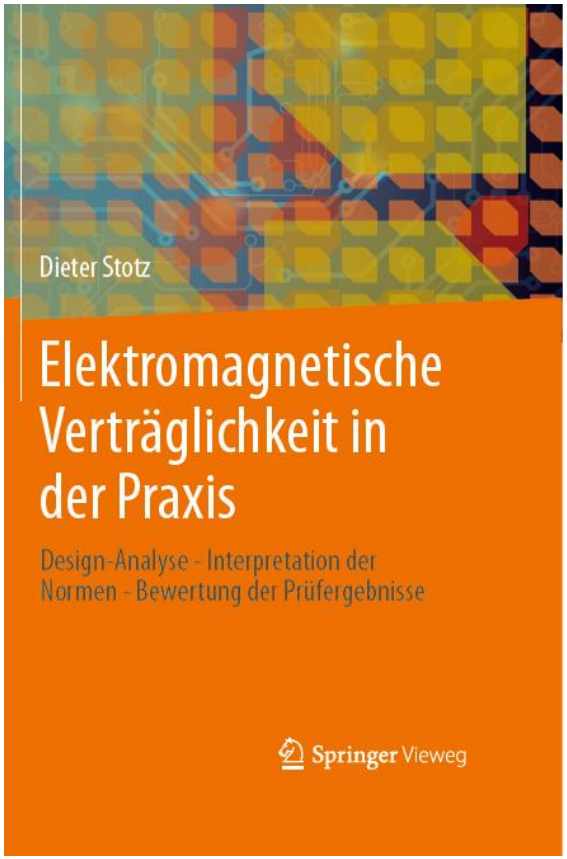
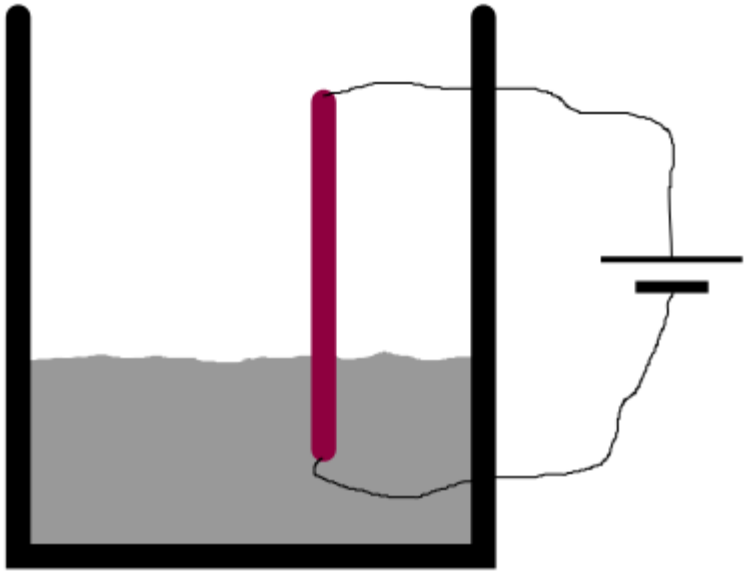
Dieter Stotz works since many years as a hardware engineer and developer especially in sensor technologies for measuring systems of the food industry. Furthermore he is an expert in Audio- and Video and EMC.

Books by Dieter Stotz

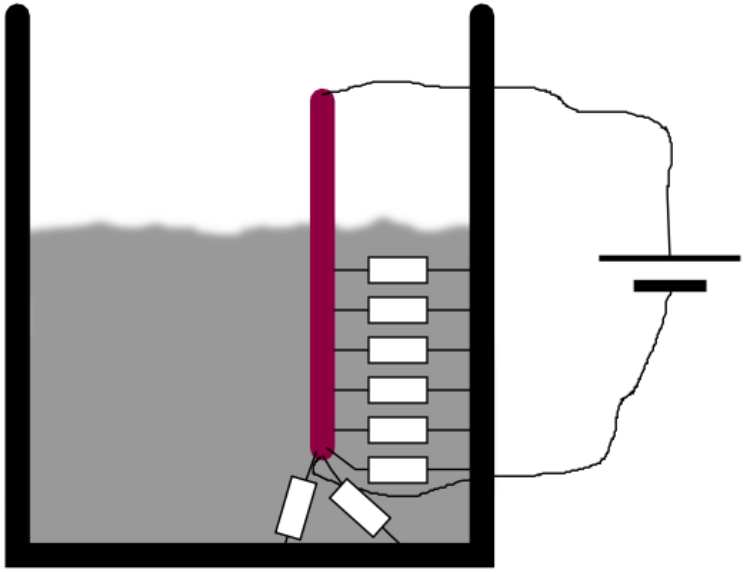


Measuring Liquid Levels



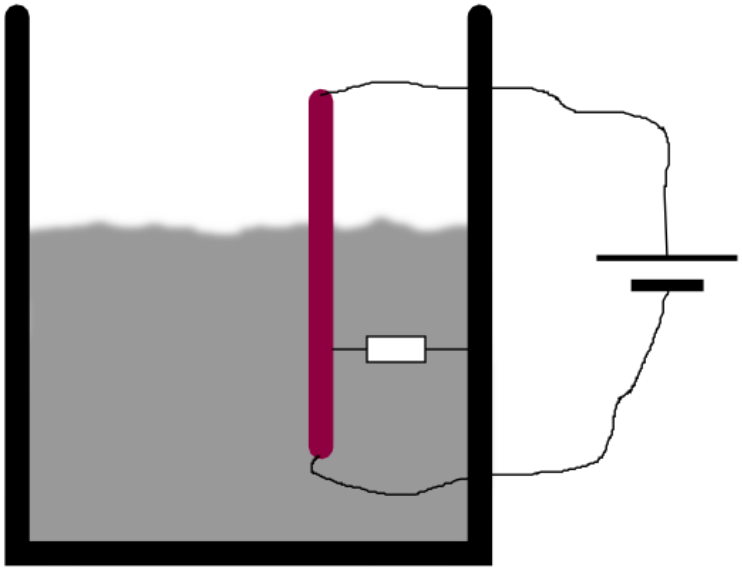
- Potential difference between rod‘s ends
- Current through rod
- Medium with conductivity
- Conductive vessel
- Wires and rod isolated

Measuring Liquid Levels



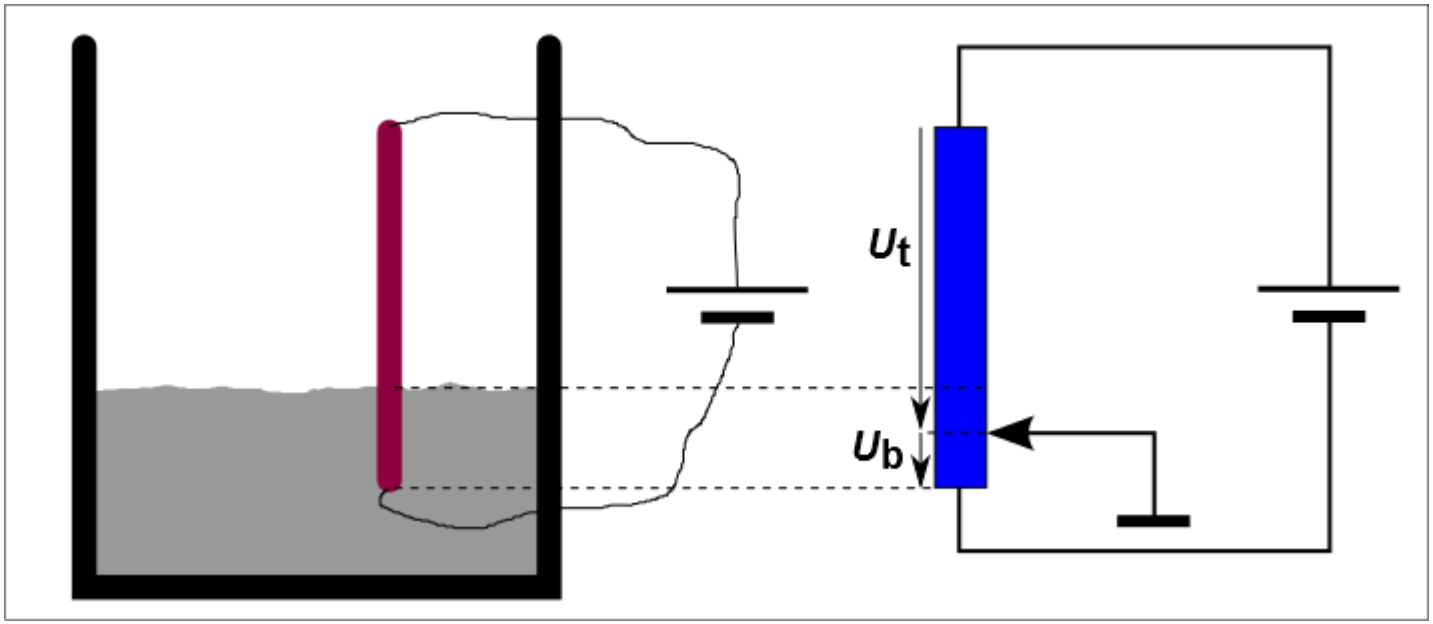
- Distributed resistors caused by the medium
- Conductivity to the vessels bottom

Measuring Liquid Levels



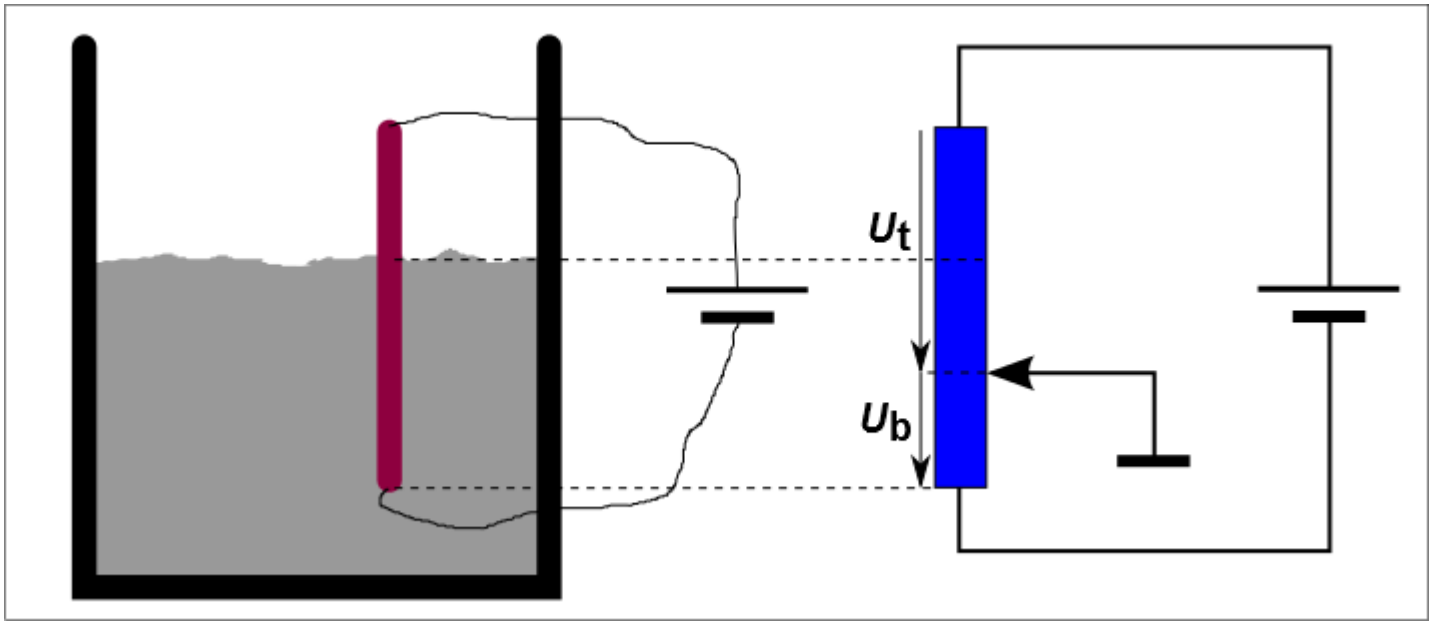
- Reducing to a central resistor
- Emphasis of the conductivity
- Half height between rod‘s bottom and liquid‘s surface

Measuring Liquid Levels



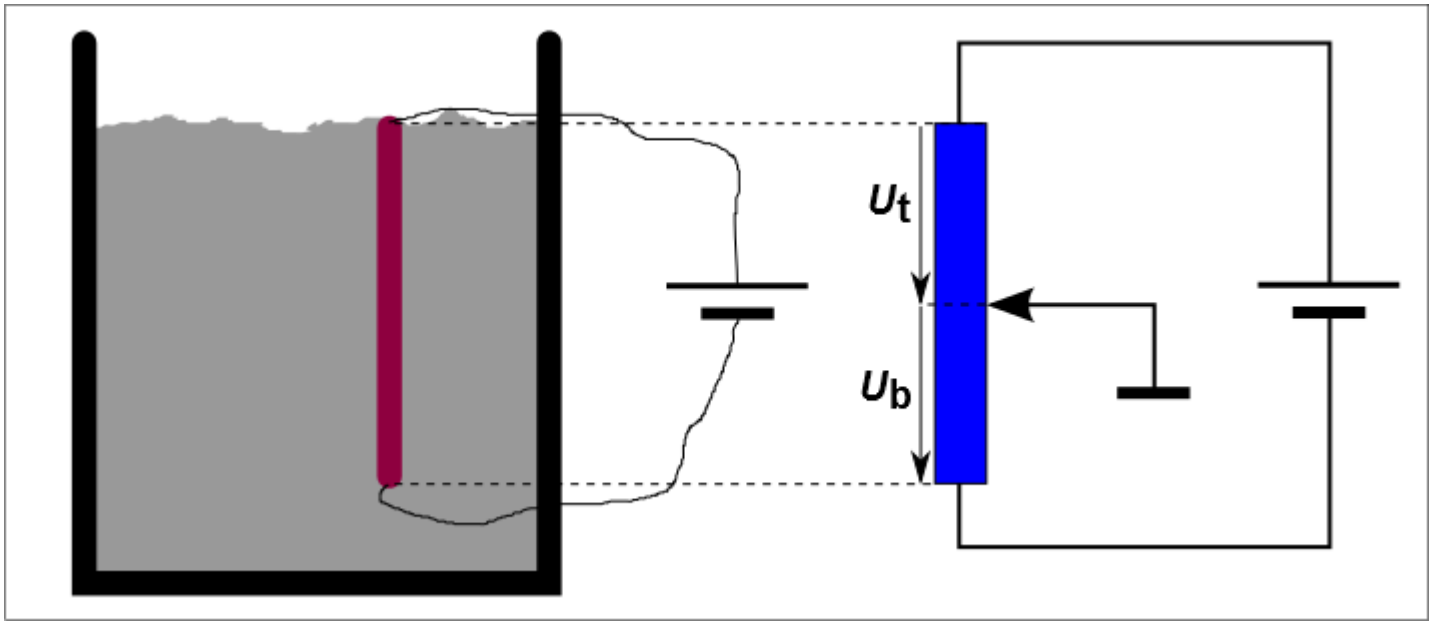
- Potentiometer equivalent circuit
- Partial voltages

Measuring Liquid Levels



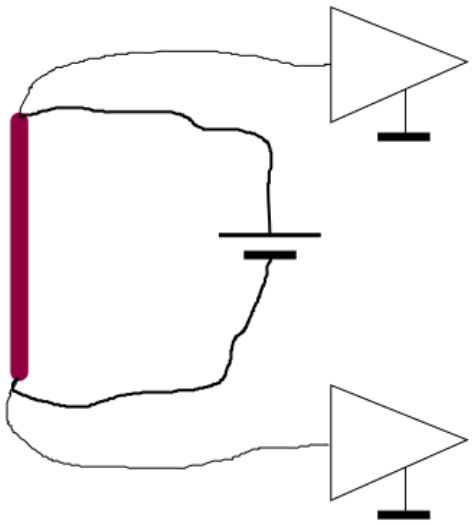
- Increasing Liquid Level

Measuring Liquid Levels



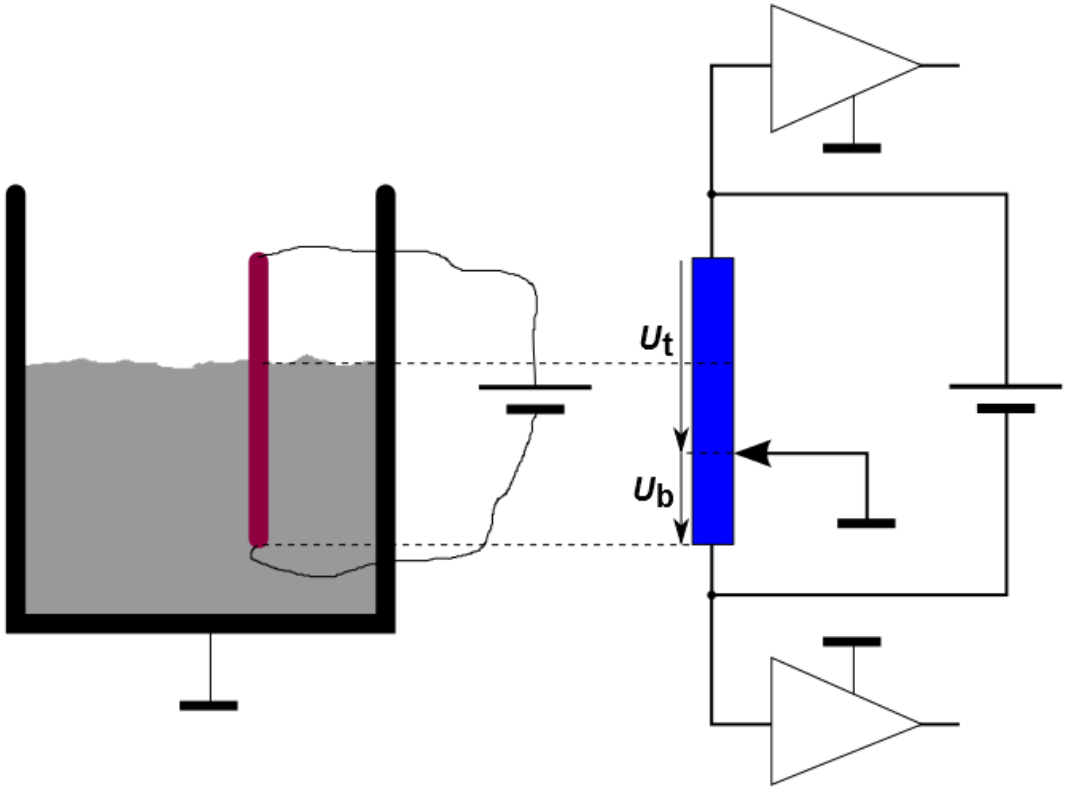
- Increasing Liquid Level
- $2\frac{U_b}{U_b+U_t}$

Measuring Liquid Levels



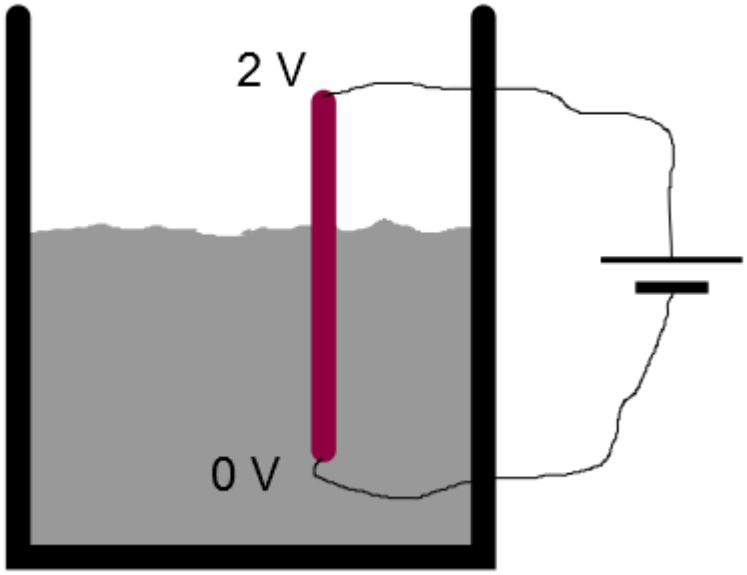
- Four wire measurement
- High impedance of the system
- Potential freedom of the rod
- Technology of the rod (internal wires in a hollow hose)

Measuring Liquid Levels



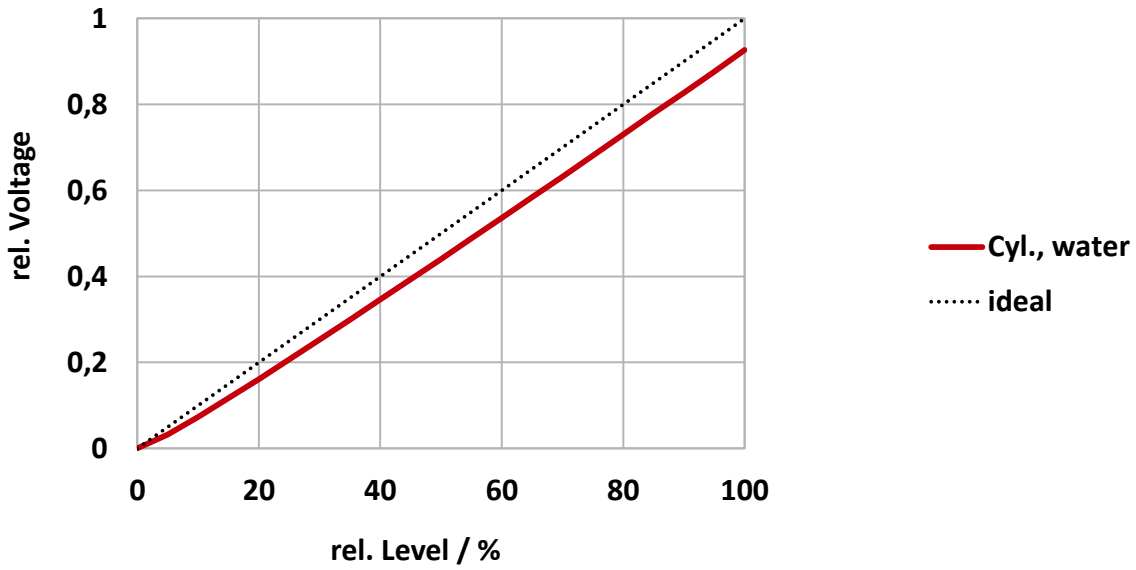
- Principle of the measurement
- AC energizing

Measuring Liquid Levels



- Simplification for simulation (vessel is potentially free)
- Potential difference between the rod‘s ends is 2 Volts to get normalized values.

Measuring Liquid Levels



- Diagram with Excel or other utilities
- Comparison to the ideal curve

Measuring Liquid Levels

Next part will be:

Level measurement on liquids – Extensions (special cases in the field) with the following themes:

- **Conical vessel shapes**
- **Temperature gradient and inhomogeneous conductivity**
- **Measurement systems with finite internal impedances**
- **Poor conductivity and AC measurement**
- **Very high conductivity, similar to metal**
- **Effects by foam generating media**