Prof. Dr. R. Kowarschik

Additional Questions to the Lectures

Optical Metrology and Sensing (WS 2015/2016)

1. What is the meaning of a material measure or standard? Give some examples for it!
2. Describe the Abbe comparator principle!
3. What is the meaning of the „confidence interval“ of measured values?
4. Explain the meaning of scanning/sensing a test piece, primary and secondary standards, systematic and random errors, uncertainty of measurement!
5. Describe the difference between “accurate/correct” and “precise”!
6. Explain the measurement terms reproducibility and repeatability!
7. What is the meaning of the sensibility and resolution of an instrument?
8. What has influenced the uncertainty of measurement of the primary standard of length?
9. What is the meaning of spatial and temporal coherence?
10. How can the coherence time and the coherence length be measured?
11. How can the spatial coherence be measured?
12. Which kinds of interference structures are generated if two plane waves, two spherical waves or a plane wave and a spherical wave are superposed?
13. What is the visibility of fringes and how can it be determined?
14. What does the degree of coherence describe and how does it influence the law of interference?