

# DIN ISO 11505:2018-02 (E)

## Surface chemical analysis - General procedures for quantitative compositional depth profiling by glow discharge optical emission spectrometry (ISO 11505:2012)

---

<b>Contents</b>		<b>Page</b>
Foreword .....		5
1	Scope .....	6
2	Normative references .....	6
3	Principle .....	6
4	Apparatus .....	6
4.1	Glow discharge optical emission spectrometer .....	6
5	Adjusting the glow discharge spectrometer system settings .....	8
5.1	General .....	8
5.2	Setting the discharge parameters of a DC source .....	9
5.3	Setting the discharge parameters of an RF source .....	11
5.4	Minimum performance requirements .....	12
6	Sampling .....	14
7	Calibration .....	14
7.1	General .....	14
7.2	Calibration specimens .....	14
7.3	Validation specimens .....	16
7.4	Determination of the sputtering rate of calibration and validation specimens .....	16
7.5	Emission intensity measurements of calibration specimens .....	17
7.6	Calculation of calibration equations .....	17
7.7	Validation of the calibration .....	17
7.8	Verification and drift correction .....	18
8	Analysis of test specimens .....	19
8.1	Adjusting discharge parameters .....	19
8.2	Setting of measuring time and data acquisition rate .....	19
8.3	Quantifying depth profiles of test specimens .....	19
9	Expression of results .....	20
9.1	Expression of quantitative depth profile .....	20
9.2	Determination of total coating mass per unit area .....	20
9.3	Determination of average mass fractions .....	21
10	Precision .....	21
11	Test report .....	21
Annex A (normative)	Calculation of calibration constants and quantitative evaluation of depth profiles .....	22
Annex B (informative)	Suggested spectral lines for determination of given elements .....	36
Bibliography .....		38