

ISO 5861:2024-06 (E)

Surface chemical analysis - X-ray photoelectron spectroscopy - Method of intensity calibration for quartz-crystal monochromated Al K α XPS instruments

| Contents | | Page |
|------------------------------|---|-------------|
| Foreword | | iv |
| Introduction | | v |
| 1 | Scope | 1 |
| 2 | Normative references | 1 |
| 3 | Terms and definitions | 1 |
| 4 | Symbols and abbreviated terms | 1 |
| 5 | Requirements | 3 |
| 5.1 | General | 3 |
| 5.2 | X-ray photoelectron spectrometer | 3 |
| 5.2.1 | Operating requirements | 3 |
| 5.2.2 | Instrument geometry | 3 |
| 5.3 | Reference material | 4 |
| 5.4 | Frequency of intensity scale calibration | 5 |
| 6 | Data acquisition | 5 |
| 6.1 | General | 5 |
| 6.2 | Preparation | 5 |
| 6.2.1 | XPS Instrument | 5 |
| 6.2.2 | LDPE reference sample | 5 |
| 6.2.3 | X-ray source and electron flood source | 5 |
| 6.2.4 | Noise spectrum | 6 |
| 6.3 | LDPE intensity measurement | 6 |
| 6.3.1 | Spectra | 6 |
| 6.3.2 | Data preparation | 7 |
| 7 | Relative response | 9 |
| 7.1 | General | 9 |
| 7.2 | Calculation of relative response, T | 9 |
| 7.2.1 | Relative throughput inspection | 9 |
| 7.2.2 | Extension of throughput data | 9 |
| 7.2.3 | Relative response determination | 11 |
| 7.2.4 | Error in relative response | 12 |
| 7.3 | Use of relative response, T | 13 |
| 7.3.1 | Correction of survey spectra | 13 |
| 7.3.2 | Use in quantification | 13 |
| Annex A (informative) | Flow charts | 14 |
| Annex B (normative) | Table of reference kinetic energies and intensities for LDPE | 17 |
| Annex C (informative) | A fitting curve for relative response | 19 |
| Annex D (informative) | Examples | 20 |
| Bibliography | | 27 |