ISO 14237:2010-07 (E)

Surface chemical analysis - Secondary-ion mass spectrometry - Determination of boron atomic concentratio n in silicon using uniformly doped materials

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Principle 1

4 Reference materials 1
4.1 Primary reference material 1
4.2 Secondary reference materials 2

5 Apparatus 2

6 Specimen 3

7 Procedure 3
7.1 Adjustment of secondary-ion mass spectrometer 3
7.2 Optimizing the secondary-ion mass spectrometer settings 3
7.3 Specimen introduction 3
7.4 Detected ions 4
7.5 Calibration 4
7.6 Measurement of test specimen 6

8 Expression of results 6
8.1 Method of calculation 6
8.2 Precision 7

9 Test report 8

Annex A (informative) Determination of carrier density in silicon wafer 9

Annex B (informative) Boron isotope ratio measured by SIMS 11

Annex C (normative) Procedures for evaluation of apparatus performance 14

Annex D (informative) Statistical report on interlaboratory test programme 16

Bibliography 19