

| | |
|-------------------------|---|
| 1. Record Nr. | UNISA996483071403316 |
| Autore | Ruzbarsky Juraj |
| Titolo | Contactless system for measurement and evaluation of machined surfaces // Juraj Ruzbarsky |
| Pubbl/distr/stampa | Cham, Switzerland : , : Springer, , [2022] ©2022 |
| ISBN | 9783031089817 9783031089800 |
| Descrizione fisica | 1 online resource (105 pages) |
| Collana | SpringerBriefs in Applied Sciences and Technology |
| Disciplina | 658.5 |
| Soggetti | Industrial management |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Intro -- Preface -- Introduction -- Contents -- Symbols and Abbreviations -- 1 Current State of the Art -- 1.1 Surface Roughness -- 1.2 Machined Surface Characteristics -- 1.2.1 Quality of Machined Surface Area -- 1.2.2 Theoretical and Actual Surface Roughness -- 1.2.3 Geometric Surface Waviness -- 1.3 Quality Parameters -- 1.3.1 Evaluation of Surface Character -- 1.4 Measurement of Machined Surface Roughness -- 1.4.1 Roughness Measurement Methods -- 1.4.2 Roughness Measurement Devices and Methods -- 1.5 Contact Methods of Roughness Measurement -- 1.5.1 Measurement System MAHR MarSurf PS1 -- 1.5.2 Measuring Instrument CarlZeiss Handysurf E-35A -- 1.6 Contactless Methods of Roughness Measurement -- 1.6.1 Measurement by Laser Sensor -- 1.6.2 Measurement System MAHR MarSurf WS 1 -- 1.6.3 Measuring Instrument Taylor Hobson CCI HD -- 1.7 Laser Profilometry LPM -- 1.7.1 Laser -- 1.7.2 Laser Light Color and Performance -- 1.8 Basic Components of Experimental Set-Ups of Optical 3D Methods -- 1.8.1 Point and Linear Optical Structures -- 1.8.2 Planar Optical Structures -- 1.8.3 Intensity Optical Structures -- 1.8.4 Applied Optical Detectors -- 1.8.5 CCD Detectors -- 1.8.6 CMOS Detectors -- 1.9 Overview of Applied 3D Methods -- 1.9.1 Laser Triangulation -- 1.9.2 Fourier Profilometry -- 1.9.3 Phase Shifting Profilometry -- 1.9.4 Phase Measuring Deflectometry -- 1.9.5 Moiré Topography -- 1.9.6 White |

Light Interferometry -- 1.9.7 Fizeau Interferometry -- 1.10
Comparison of Parameters of Equipment Applied in Surface Roughness
Measurement -- References -- 2 Laser Profilometer Design -- 2.1
Frame Structure -- 2.2 Micrometric Slide -- 2.3 Objective -- 2.4 CMOS
Camera -- 2.5 Applied Laser -- 2.6 Lighting -- 2.7 LPM View Software
-- 2.8 General Characteristics of the LPM System -- References -- 3
Production of Experimental Samples.
3.1 Material Characteristics of Proposed Samples -- 3.2 Production
of Samples by AWJ Technology -- References -- 4 Description
of Measuring Experiment -- 4.1 Measurement of Selected Roughness
Parameters by Contact Method -- 4.2 Measurement of Selected
Roughness Parameters by Contactless Method -- 5 Measurement
of Roughness Parameters by Contact Surface Roughness Tester -- 5.1
Samples with Declared Roughness of $R_a = 6.3 \mu\text{m}$ (AL120, SS050,
FS050) -- 5.2 Samples with Declared Roughness of $R_a = 12.5 \mu\text{m}$
(AL220, SS120, FS100) -- 5.3 Samples with Declared Roughness of R_a
 $= 25 \mu\text{m}$ (AL370, SS150, FS150) -- 6 Measurement of Roughness
Parameters by Contactless Laser Profilometer LPM -- 6.1 Samples
with Declared Roughness of $R_a = 6.3 \mu\text{m}$ (AL120, SS050, FS050) -- 6.2
Samples with Declared Roughness of $R_a = 12.5 \mu\text{m}$ (AL220, SS120,
FS100) -- 6.3 Samples with Declared Roughness of $R_a = 25 \mu\text{m}$
(AL370, SS150, FS150) -- 7 Glossy Surface Measurement -- 7.1
Comparison of Achieved Results by Contact and Contactless Roughness
Surface Testers -- Reference -- 8 Conclusion -- Uncited References.
