



Biomedical Deformation Measurement using Laser Techniques

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Laser and fiber optics applications have opened some new possibilities in medicine and dentistry. Advanced diagnostic techniques and laser-based therapeutic techniques have been developed. Here, we have introduced some new techniques for medical and dental applications using lasers and modern optics. The main task of our work is biomedical applications of lasers. A new approach based on image holography is applied for dental deformation measurement. The advantages of this technique compare to existing techniques are shown. Imaging and deformation measurement of in-plane and out-plane deformations is performed using the interferometric fringes. Interferograms obtained by holographic-based techniques are shown. The imaging technique, based on optical implementation of moments as to our best knowledge, is introduced for the first time in biomedical applications. In addition to this Fourier Transform of far Field diffraction technique is introduced as well. A simple and robust technique based on the Moiré phenomenon is applied. Using Moiré fringes generated by two gratings and their projection on the object to be analyzed, contours and 3-D information are obtained. | Format: Paperback | Language/Sprache: english | 72 pp.



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