Preface

The organizing committee warmly welcomes our distinguished delegates and guests to the International Conference on Advanced Measurement and Test. 2010 International Conference on Advanced Measurement and Test (AMT 2010) was held on May 15-16, 2010 in Sanya, China. And, 2011 2nd International Conference on Advanced Measurement and Test (AMT 2011) was held on June 24-26, 2011, in Nanchang, China. This year, 2013 3rd International Conference on Advanced Measurement and Test (AMT 2013) will be held on March 13-14, 2013, in Xiamen, China.

AMT2013 invited authors to submit original, unpublished papers describing recent work in the field of test and design. Also, authors are invited to submit practical, industry best practices to be included in application/lecture series sessions. Submissions simultaneously under review or accepted by another conference, symposium or journal, will be rejected.

464 manuscripts published in the proceeding have been peer reviewed by the reviewers drawn from the scientific committee, external reviewers and other experts in the field of measurement and test. The primary aim of the proceeding is the combined coverage of the electronic test of devices, boards and systems—covering the complete cycle from design verification, design-for-test, design-for-manufacturing, silicon debug, manufacturing test, system test, diagnosis, failure analysis and back to process and design improvement at the advanced level. Such an approach enables the engineer to take into account the essential mechanical properties of the material itself and special features of practical implementation, including manufacturing technology, experimental results, and design characteristics.

All the papers are sorted by chapters. In chapter 1, it describes the advancement in material science and its processing technology. Such as paper “High Temperature Corrosion of Superheater Materials in Chlorination-oxidation Atmosphere”, it found that two different types of un-vulcanized natural rubber, air dried sheets (ADS) and SVR-3L block rubber, were investigated by a new testing method and the results are compared with other mechanical properties. It was found that green strength is strongly reduced if the sample is ther¬mal¬ly treated before testing. Presumably, the decrease of strength is caused by a decrease of branch points, mainly composed of phospholipids, which are linked to the - terminal groups of the rubber molecules. The existence of two different types of branch points is indicated by relaxation spectra, obtained from temperature scanning stress relaxation (TSSR) measurements.

The purpose of chapter 2 is to discuss the new progress and application of measurement and test. For example, a measurement system based on machine vision applied for auto-hub’s eccentricity between the center hole and pitch circle of bolt holes was proposed. Morphology, circle fitting, affine transformation and edge extracting were used for the measurement of auto-hub eccentricity (from paper “Hub Eccentricity Measurement Based on Machine Vision”).

Chapter 3 focuses on the general mechanical engineering. This chapter requires an understanding of core concepts including mechanics, kinematics, thermodynamics, materials science, structural analysis, and electricity. Mechanical engineers use these core principles along with tools like computer-aided engineering and product lifecycle management to design and analyze manufacturing plants, industrial equipment and machinery, heating and cooling systems, transport systems, aircraft, watercraft, robotics, medical devices, and others.

The purpose of chapter 4 is to discuss image processing and information engineering. It includes Image-processing operation, image information processing system, Image data processing, information of engineering testing, information systems engineering and so on.

Welcome to AMT2013! Welcome to Xiamen, China!

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