Foreword
ATS 2022

Welcome to the 31th Asian Test Symposium (ATS 2022). Since 1992, ATS has been held every year in various Asian cities as the largest symposium that focuses on testing of integrated circuits and systems. Many researchers and engineers from all over the world have attended the past symposia and enjoyed discussions. After more than two years of COVID-19 pandemic, ATS 2022 is being held as a hybrid event to invite symposium participants to join on-site meeting, and also to allow on-line participation through conference app platform.

The program of ATS 2022 consists of tutorials, keynote speech, technical sessions and other special sessions. The subjects of the tutorials are "Si-Based Qubits and Cryo-CMOS Control Circuits", "Test and Diagnosis of Quantum Circuits" and "Addressing Test, Safety, & Security for Connected Automotive ICs" The keynote speech includes "How the Test Community can Rise to the Challenge of Chiplets", "Learning by Failing: Test-Thinking for Impactful Machine Learning" and "A Paradigm Shift; From Device to System Testing." We also have four industry session: "Latest Technologies and Solutions for Hyperscaler Designs", "Driving Intelligent System Design with 3D-IC", "The Test Solutions Addressing the Scalings for Technology, Design and System" and "From Chip D&T to Energy-Efficiency". And one special session is given with "Radiation Effects, Test, and Fault Tolerance".

We had technical papers submitted from 10 countries and regions. Each paper was reviewed by four reviewers mostly, with a few by three reviewers. We thank all reviewers for their valuable efforts. The Program Committee meeting was held on August 5th, 2022. Based on the reviewers' evaluations and TPC member discussion, 27 papers were selected as oral presentation papers. The selected papers cover wide range of topics including Design and Test for Reliability, Hardware-Oriented Security and Trust, Validation and Verification, ATPG and Fault Simulation, Design and Test for Functional Safety, Design for Testability, Machine Learning and AI, Diagnosis and Debug, Test and Validation for Processors. In addition to the technical sessions, we have doctoral thesis award session and high school student presentations.

Finally, we would like to thank the Program Committee members, the Organizing Committee members, and the ATS Steering Committee members for all their help. We also thank to all the authors who submitted their works to this 31th Asian Test Symposium, and the program participants for their contribution at the symposium.

Jin-Fu Li, *National Central University*
ATS 2022 General Chair

Jing-Jia Liou, *National Tsing Hua University*
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