2022「中技社科技獎學金」

2022 CTCI Foundation Science and Technology Scholarship

研究獎學金

Research Scholarship

藉由理論、模擬、實驗探討基材-異質複合材料之破壞分析

Failure Analysis of a Matrix-Inclusion Composite by Theory, Simulation, and Experiment method

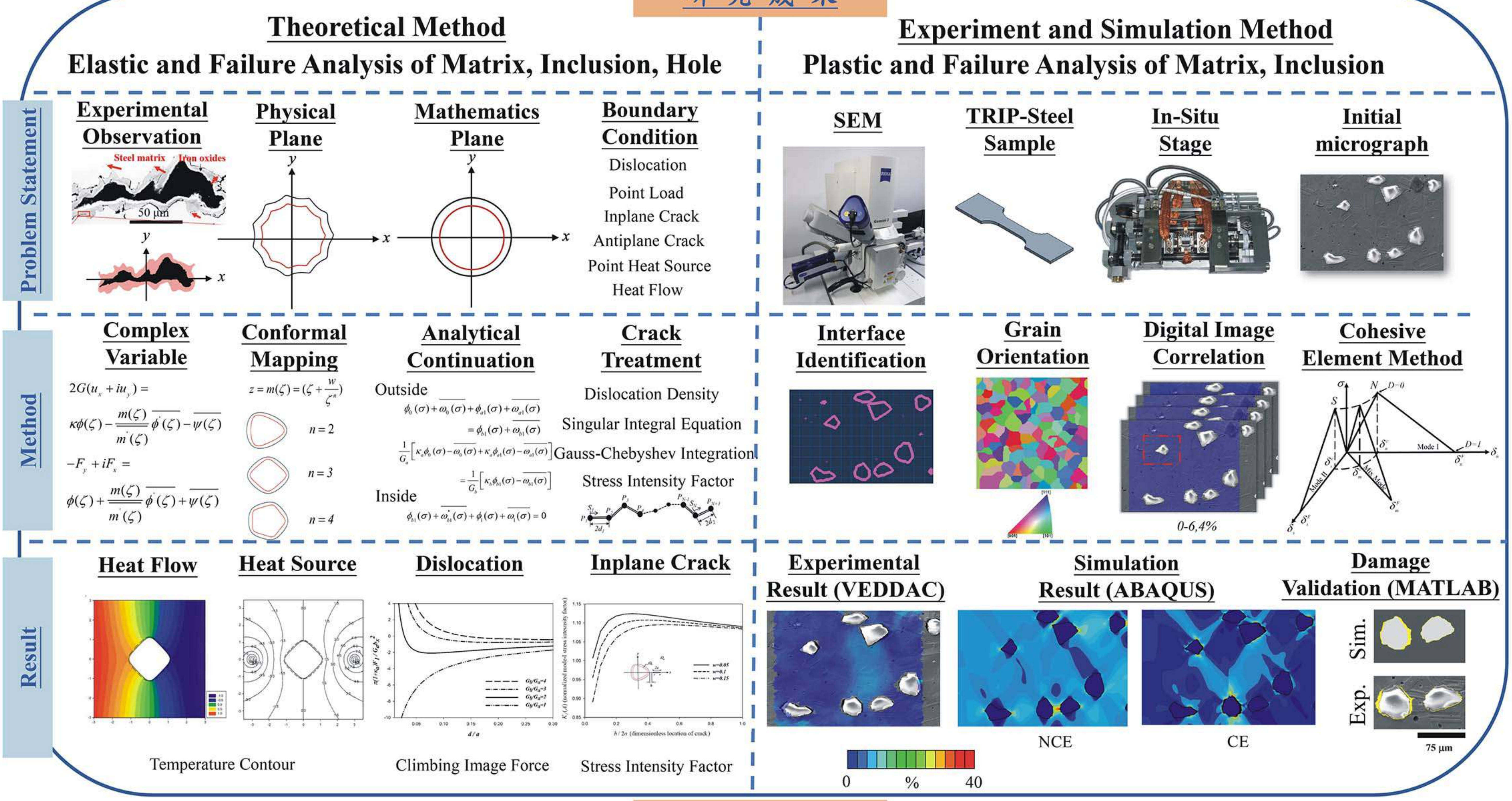
國立臺灣科技大學 機械工程系 博士班五年級 曾紹震

指導教授 ： 趙振綱 講座教授、Prof. Dr.-Ing. Ulrich Prahl (德國)

研究重點

The research for this problem consists of two parts. In the first part, the failure behavior of an arbitrarily shaped hole with inclusion located at the matrix under elastic or thermoelastic boundary conditions is considered by the theoretical method. Based on the method of analytical continuation with alternating technique, complex variable, and conformal mapping method, the temperature contour or interfacial stress can be solved. To examine the realist situation, the second part presents multiple arbitrarily shaped inclusion in the matrix by coupled experiment and simulation. Hence, the Transformation Induced by Plasticity (TRIP) steel composite reinforced with 5% Vol-% ceramic particle is studied.

研究成果



研究生活及心得

感謝中技社與評審委員的肯定，榮獲研究獎學金。首先最感謝指導教授趙振綱老師一路的教導以及培養縝密的邏輯思維能力。由於趙老師提供給我自由發揮的空間，鼓勵我跨國合作交流，在博士班期間，赴中國西安交大航太所研究以及德國TU Freiberg 金屬成型研究所(DAAD-MOST 台德三明治計畫)擔任客座研究員，至今完成了將近20篇國際期刊。同時，也感謝德國的共同指導教授 Dr. Ing Ulrich Prahl，給予我不同面向的研究思維與研究資源。最後感謝我的父母與老婆，支持我攻讀博士班使我無後顧之憂，期許未來能貢獻於台灣科技產業。