台北科技大學能源與冷凍空調工程系
Department of Energy and Refrigerating Air-Conditioning Engineering

Center for Clean Technology Research, CCTR

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Introduction

The CCTR is a leading research group which mainly focuses on developing new technology and improving the performance of cleanroom and high-tech facility for semiconductor industry in Taiwan.

The center was formed in 2005 and is led by Professor Shih-Cheng Hu within the College of Mechanical and Electrical Engineering at National Taipei University of Technology (NTUT/ Taipei Tech). Over the years of expansion, in 2018, the center became one of the seven university-level research centers in Taipei Tech.

Through basic and applied research, the center's topics focus on all contamination challenges related to semiconductor manufacturing environments which includes the following: heating, ventilation & air-conditioning (HVAC) of cleanroom system, air quality in cleanrooms, particle filtration, airborne molecular contaminations (AMCs) control, micro-contamination in wafer/mask handling system (FOUP, EUV Pod etc.), purge technology, mastery of cleanroom & detail designs and etc.

Research Topic

1. Cleanroom design
2. Environmental purification (FOUP Purge)
3. CFD simulation
4. PIV technology development
5. Filter technology development
6. Environment monitoring

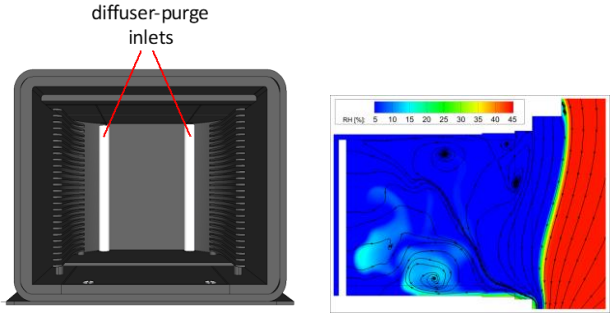
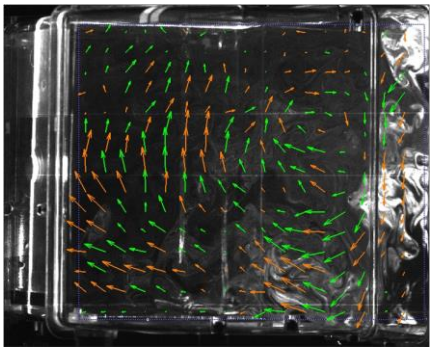


Figure 1. FOUP purge CFD simulation



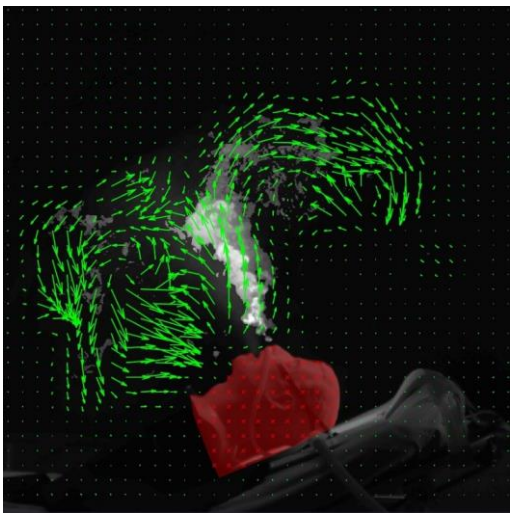


Figure 2. PIV technology applications

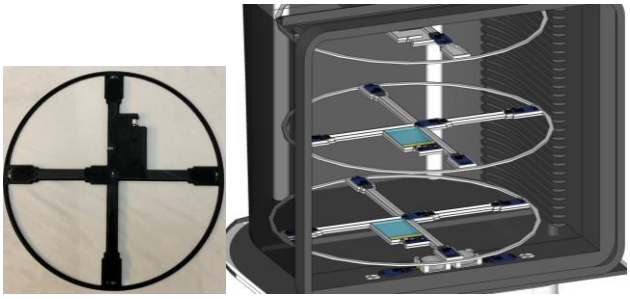


Figure 3. FOUP T/RH monitoring system

Figure 4. Filter performance test system