THOMAS CLARK

xx xxxxx xxxxxx ▪ xxxxx, xxxxxxx xxxxx

xxx.xxx.xxxx (H) xxx.xxx.xxxx (C) ✉ xxxxxx@yahoo.com

PROFILE

Seasoned and highly talented Mechanical Engineer, offering more than 20 years of credible experience in managing product development from market analysis through concept, qualification and manufacturing. Demonstrated solid knowledge of Heat Transfer, Thermodynamics and Fluid Mechanics with emphasis on Heating Ventilation and Air Conditioning (HVAC) and Refrigeration System. Bilingual in Chinese and English. Areas of expertise include:

- Heat Transfer or Thermal System Analysis
- Heat Exchanger Design
- Refrigeration System Analysis and Design
- Project Management
- Fan System Design and Analysis
- Computer Modeling or Simulation Skills

COMPUTER SKILLS

Programming Language: Visual Basic , C, FORTRAN and Q Basic

Software: Microsoft Word, Excel and Project, SolidWorks, IMST-ART, Coil Designer/VapCyc (CEEE), EES, REFPROP, TRACE Load 700 (HVAC Systems) and COSMOS (FEA)

PROFESSIONAL EXPERIENCE

MCQUAY INTERNATIONAL ▪ AUBURN, NY

PROJECT LEADER/ SENIOR DEVELOPMENT ENGINEER (GREEN PTAC/HP) **2009-PRESENT**

Lead and direct the development team in upgrading the current products into Green PTAC/HP products. Prepare and write the development plan using the NPI process. Perform computer simulation and pre-select components, as well as create and establish the technical specification for Green PTAC/HP project.

PROJECT LEADER / SENIOR DEVELOPMENT ENGINEER (VERTICAL STACK WSHP) **2007-PRESENT**

Supervise and coordinate the development team for new Vertical Stack WSHP line. Perform multifaceted functions such as monitoring and maintaining the progress of the project using NPI process, interfacing with other team members, as well as giving instructions to designers regarding mechanical design and lab technicians for prototypes testing. Provide engineering expertise in designing and developing finned tube heat exchangers and fans system in addition to selecting and sizing other refrigeration components such as coax HX, TXV, fan motors and compressors. Study and estimate production cost as well as prepare products safety agency documentation for UL and ETL. Analyze and optimize acoustic design for the products. Assist and guide application engineers in solving complex problems encountered from all products lines. Train and mentor junior engineers in designing thermal and refrigeration system of other products.

- Successfully completed the design and testing of all models within a limited time frame.
- Played an integral role in designing products that attained the industry highest performance in thermal and acoustics standard points, which will be launched to market in this summer.

PROJECT LEADER / SENIOR DEVELOPMENT ENGINEER (APPLIED PTAC/HP) **2005-2007**

Acted as project leader and chief engineer of the product development team. Interfaced and communicated with marketing, purchasing and manufacturing groups utilizing the NPI process. Performed highly complicated functions including maintaining and tracking of project progress, supervising designers and lab technicians for product development, as well as managing the testing for product development and ARI ratings. Completed the documentation of ARI/ETL/CSA/MEA agency list.

- Successfully led the development team in completing new applied PTAC/HP products design from concept to final production in timely manner, achieving industry's highest performance on products.

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- Joined the McQuay-Daikin global development team on heat transfer, microchannel heat exchanger and inverter compressor research projects.
- Maintained and cultivated familiarity and knowledge in UL1995 and UL484.

SENIOR DEVELOPMENT ENGINEER (HEAT TRANSFER / REFRIGERATION SYSTEM) **1997-2005**

Provided support in the design and analysis of thermal and refrigeration system of all product lines in Auburn facility as well as joined and aided the Rooftop group in designing coils and fan systems. Optimized refrigeration system performance through designing heat exchangers and air movement system (fan/house/motor) and balancing and selecting components such as expansion device and compressor. Designed and developed new Horizontal and Vertical WSHP products using R410A. Rendered technical support and troubleshooting capacity for customer service group. Participated in various cost reduction projects.

- Initiated the development and upgrade of PTAC/HP, Water Source Heat Pump, Fan, Coil and Unit Ventilator products.

EARLIER CAREER

THE PALLET REEFER COMPANY ▪ HOUMA, LA

MECHANICAL ENGINEER 1994-1997

- Supervised and coordinated experiments such as designing thermal analysis computer model for the refrigeration system and optimizing the airflow pattern inside the refrigerator case.

UNIVERSITY OF MARYLAND ▪ COLLEGE PARK, MD

RESEARCH ASSISTANT-CENTER FOR ENVIRONMENTAL ENERGY ENGINEERING 1992-1994

- Designed and developed models of heat and mass transfer as well as refrigerant flow channel pressure distribution in evaporator. Devised a model of film condensation process and non-condensable gas effect in the condenser. Conducted and coordinated research regarding ammonia-water solution concentration and non-condensable gas effect on heat and mass transfer process in the absorber.
- Wrote and documented the entire computer simulation program for the whole refrigeration system based on the individual models of evaporator, condenser and absorber.
- Developed the simulation program of Alkitrate Lithium Bromide Combined Triple-Effect Heat Pump.

UTAH STATE UNIVERSITY ▪ LOGAN, UT

RESEARCH ASSISTANT- AEROSPACE DYNAMICS RESEARCH LABORATORY (NASA) 1991-1992

- Completed studies and investigations of cooling system and heat sink for electronics package designed for spacecraft.
- Researched and investigated heat pipes, radiator and thermal properties of various materials used in spacecraft construction as well as porous materials as cryogenic liquid-vapor phase separator in zero gravity environments.

ZHEJIANG UNIVERSITY ▪ HANGZHOU, P.R., CHINA

ASSISTANT PROFESSOR-DEPARTMENT OF ENERGY ENGINEERING 1987-1991

- Facilitated instructions regarding *Heat Transfer*, *Engineering Thermodynamics*, *Fluid Mechanics, Thermal and fluid experiments* for undergraduates.
- Designed and developed various equipments and devices including Steam Operated Double-Effect Lithium Bromide Absorption Chiller and shell-and-tube heat exchangers as well as launched testing for each component and the whole system.

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- Investigated heat and mass transfer in the generator and absorber as well as the LiBr solution crystallization and properties.

EDUCATION

Master of Science in Mechanical Engineering
University of Maryland ▪ College Park, MD: 1994
Thesis: "Performing Modeling of the Diffusion-Absorption Heat Pump"

Master of Engineering in Thermophysical Engineering
University of Science and Technology of China ▪ Hefei, P.R. China: 1987
Thesis: "Boundary Element Method in Heat Transfer"

Bachelor of Science in Mechanical Engineering
University of Science and Technology of China ▪ Hefei, P.R. China: 1984
Thesis: "Using Hot Wire Method to Measure Thermal Properties of Materials in High Temperature Condition"

PROFESSIONAL TRAINING

SolidWorks Workshop (2007)
Analysis and Design of Microchannel Heat Exchanger (2002)
Simulation Tools for Vapor Compression System and Component Analysis (2000)

PUBLICATION

"Hotel Room Air Conditioner Design Based on the Diffusion-Absorption Cycle", 1995 ASHRAE Transaction, Vol. 101, Part 1, pp. 1290-1301.