Hubert Jie

Chemical & Process Engineer and Project Manager

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Citizenship: New Zealand

I am a very fast learner, highly committed and self-motivated person. I always have can-do attitude and deliver tasks in timely manner. I diligently study the unknowns, persistently solve problems, and devoutly push my capabilities above and beyond. I also love to connect with people and expand my network professionally and socially.

Vision: To be the expert in leading mega projects especially in technology and engineering industries

Note: for projects list and details I have been involved throughout my career, please see http://nz.linkedin.com/in/hubertjie

Work Experience:

Current Position: Project Manager/Process Engineer **February 2018 – Present**
Environment Products International Ltd, Auckland, New Zealand
Duties and Skills:
[Turnkey Project] Engineering, Procurement, Construction, Installation and Commissioning Management

Project Management:

- Assessed and investigated the return of investment on new capital projects
- Conducted engineering feasibility study, developed business case and recommended improvement
- Submitted bids/tenders and quotations for new projects in food, beverage, dairy and wastewater processes
- Managed AS4910-2002 contracts with performance guarantee
- Reviewed, produced, and managed Job Safety Assessment (JSA), Hazard and Operability study (HAZOP), Plant Risk Assessment, and Safe Work Method Statement (SWMS)
- Managed cost estimation, capital budget control, financial KPI and human resources/contractors
- Managed equipment and materials procurement
- Managed project schedule, project deliverables and change orders
- Managed communications to set clear expectations for project teams, clients, and key stakeholders upfront
- Managed and supervised fabrication and on-site installation
- Commissioned and troubleshot the whole plant (mechanical, electrical, instrumentation and automation)
- Managed and ensured compliance to HS&E regulations and GMP standards
- Supervised and trained factory/plant operators
- Managed project practical completion, handover and closure

Engineering:

- Engineered membrane filtration: RO, NF, UF, MF for dairy processing plant, including automated CIP system
- Designed and produced process flow, P&ID, mass balance calculation, heat balance, and equipment sizing
- Designed pipe size, heating supply (steam/hot water), chilling supply (glycol/cold water), and heat exchangers.
- Designed and produced process description and functional description (SFC/GRAFCET) for automation engineer
- Reviewed and amended process control phases and sequences (debugging or process improvement)
- Designed process control and monitor points for instrumentation (flowmeter, temperature & pressure transmitter, ORP probe, conductivity meter, etc.)
- Drafted and reviewed 2D CAD and 3D Solidwork drawings process and equipment designs before fabrication
- Reviewed electrical drawings: EtherNet/IP, AS-i, PLC panel: digital/analog input/output allocations & counts
- Designed effective pipe runs and sized pipe racks/gantries to accommodate optimum capacity

Most recent projects with Environment Products International Ltd:

- **Salty Whey NF** **March 2020 – Ongoing**

  Client: Saputo Dairy Australia, VIC, Australia

  This is a brown field project to install a new NF plant. The purpose is to separate the whey protein and salt, therefore, the whey protein can be turned into valuable product

  - Conducted engineering feasibility study
  - Designed the NF membrane system
  - Liaised with automation team to integrate new code into current site system
  - Managed electrical and mechanical installation
  - Commissioned the NF plant and troubleshot the plant automation
  - Managed equipment and materials procurement
  - Reviewed 3D Solidwork drawings by draughtsman before fabrication
  - Reviewed and amended process control phases and sequences
  - Managed contractors from initiation to closure

- **Acid Whey UF and NF** **October 2019 – March 2020**

  Client: Tatura Milk Industries, VIC, Australia

  This is a brown field project to repurpose existing UF and NF system. Traditionally, acid whey has been disposed as pig food for free. With this, the site has capability to turn their acid whey into valuable/sellable product.

  - Conducted engineering feasibility study
  - Re-engineered to optimize old UF and NF membrane system
  - Liaised with automation team to integrate outdated code into current site system
  - Managed electrical and mechanical installation
  - Commissioned the UF and NF plant and troubleshot the plant automation
  - Managed equipment and materials procurement
  - Reviewed 3D Solidwork drawings by draughtsman before fabrication
  - Reviewed and amended process control phases and sequences
  - Managed contractors from initiation to closure

- **Whey UF** **June 2019 – Ongoing**

  Client: Australian Consolidated Milk, Girgarre, Victoria

  This is a new factory build with full automation. The work involved engineering management across various disciplines and integration with other projects in the site.

  - Engineered UF membrane plant to increase the concentration of Whey milk
  - Prepared and Reviewed P&ID
  - Drafted and reviewed 2D CAD process and equipment designs
  - Managed equipment and materials procurement
  - Reviewed 3D Solidwork drawings by draughtsman before fabrication
  - Reviewed electrical drawings: EtherNet/IP, PLC control panel: digital/analog input/output allocations
  - Reviewed and amended process control phases and sequences
  - Commissioned and troubleshot the plant automation
  - Managed project and contractors from initiation to closure

- **Skim Milk RO** **February 2018 – December 2019**

  Client: Lion Dairy and Drink, Morwell, Victoria

  This is an installation of a new skim milk RO. With this, the site has the capability to increase total solid percentage of milk through automatic continuous process. Previously, powder mixing method was used. Hence, intensive manual labour was required.

  - Engineered RO membrane plant to increase the concentration of skim milk
  - Prepared and Reviewed P&ID
  - Drafted and reviewed 2D CAD process and equipment designs
  - Managed equipment and materials procurement
  - Reviewed 3D Solidwork drawings by draughtsman before fabrication
  - Reviewed electrical drawings: AS-i network, PLC control panel: digital/analog input/output allocations
  - Reviewed and amended process control phases and sequences
  - Commissioned and troubleshot the plant automation
  - Managed project and contractors from initiation to closure

Previous Position: Application Engineer **August 2013 – January 2018**
Custom Controls Ltd., Auckland, New Zealand
Duties and Skills:

- Engineered and experiences in various process control instruments: control valve, self-regulating valve, desuperheater, tank protection, and transmitters to accommodate various industries application (Pulp & Paper, HVAC system, dairy industry, steam boiler, geothermal and severe services in oil refinery)
- Involved intensively in supplying and selecting various process control instruments and engineering solutions in steam boilers area.
- Engaged in mass flow and other fluid dynamics calculations daily and proposed better equipment to reduce maintenance cost or improve production
- Prepared and presented costings, quotations and related documentations/drawings to clients
- Organized equipment preparation, installation, and commissioning
- Developed software/tools to improve the efficiency of daily tasks (automate similar tasks)
- Liaised daily with manager, supervisor, other internal departments and customers to deliver effective solutions

Most impressive project with Custom Controls Ltd:

- **Refining NZ Shutdown Maintenance (NZD 863k)** **June 2017 – February 2018**
  - Identified required spare parts for maintenance
  - Engineered valves replacements
  - Estimated cost and delivery time
  - Liaised with internal managers and suppliers to improve cost
  - Managed sourcing origins, components to be assembled, and shipment
  - Monitored progress and ensured delivery
  - Inspected and assured quality of the equipment upon arrival
  - Archived all works and released any related documentations, testing results and certifications

Education:

- **Project Management Professional (PMP) Certification – In Progress**
  - Already passed experiences audit and will be sitting for the certification exam mid 2020

- **University of Auckland** **Auckland, New Zealand**
  Master of Engineering
  Major: Chemical Engineering Specialisation: Process Engineering and Project Management
  Graduated: July 2013 (Semester 1, 2013)
  Key Courses:
  - Project Management
    - Project Lifecycle and Organization
    - Project Selection and Project Scope Management
    - Project Time Management
    - Project Cost Management
    - Project Quality Management
    - Project Human Resources Management
    - Project Risk Management
    - Project Procurement Management
    - Project Stakeholder Management
    - Project Communications Management
    - Project Integration Management
  - Advanced Process Engineering
    - Heat Exchanger, Pasteuriser, UHT
    - Separator: Centrifugal, Membrane Filtration
    - Standardisation, Homogeniser, Evaporator, Deaerator
    - Dryer (Powder Production)
    - Tank: Mixing, Agitator, Process, Storage
    - Cleaning-in-Place (CIP) System
    - Automation: Process Control, PLC
    - Refrigeration, Packaging
    - Wastewater Treatment: Dissolved Air Flotation (DAF)

- **Iowa State University** **Ames, Iowa, USA**
  Bachelor of Science; Major: Chemical Engineering
  Graduated: December 2011
  Key Courses:
  - Chemical Engineering Unit Operations (i.e. filtration, heat exchanger, distillation, etc.)
  - Polymers and Polymer Engineering
  - Engineering Statistics
  - Researches (Refer to Research Experience)
  - Process and Plant Design
    - Piping and Instrument Diagram
    - Process Flow Diagram
  - Process Control and Automation

Skills Inventory:

Computing Skills

- AutoCAD and Microsoft Project
- Microsoft Office Suite (Word, Excel, PowerPoint, Access, Visio, etc.)
- Plant/Process Design Simulator: Aspen HYSYS and VMGSim (by Virtual Materials Group Inc.)
- Computational Fluid Dynamic: OpenFOAM
- Programming Language: C++, HTML, Phyton, PHP, Unix Shell Script
- MATLAB and Simulink for Process Control Simulation

Project Management Skills

- Managed, planned, and controlled projects
- Reviewed engineering works to match compatibilities, requirements, and standards
- Liaised with various suppliers and internal departments to deliver projects with effective cost and time.
- Analysed, solved, and troubleshot hindrances in engineering projects
- Time management: planned and organised project teams to assure progress

Process Engineering Skills

- Ensured overall process designs within engineering standards and safety.
- Engineered steam traps skid to prevent water hammer effect
- Engineered special material selections and constructions of control valves to accommodate unique environments or severe service duties. For example, CK3MCuN SST (254 SMO) valve on brown stock solution application for Oji Fibre Solutions chlorine bleach plant.
- Reviewed and proposed amendments to process designs to deliver cost effective and long lasting solution.
- Engineered, designed and simulated various process engineering unit operations: fluid transportation, filtration, evaporation, condensation, heat exchange, absorption, adsorption, distillation, extraction, drying, refrigeration, etc.
- Studied and simulated dairy processing based on Fonterra plant model and Tetra Pak Dairy Processing Handbook

Communication Skills

- Presented several projects to clients, colleagues, lecturers, and public
- Simplify complex topic into easily understandable conversation

Numerical Skills

- Analysed and interpreted statistics and graphs
- Automated complex formulas calculation and coded these into Microsoft Excel, MATLAB, OpenFOAM, and C++.

Research

❖ **Master of Engineering Research (supervised by Dr. Murat Balaban)**
University of Auckland, Auckland, New Zealand 2012 – 2013
A preliminary study in salmon's pin bones characteristics for future project in developing full automatic pin bones total removal system
Duties:

- Measured and critically analysed the required forces to detach pin bones from salmons' flesh
- Measured the required forces to break pin bones, analysed the data and published the report

Skills Gained: Understanding in in-depth pin bones' characteristics and in publishing research report
Publication: Balaban, M. O., Jie, H., Yin Yee, Y. and Alçiçek, Z. (2015), Method to Measure the Force to Pull and to Break Pin Bones of Fish. Journal of Food Science. doi: 10.1111/1750-3841.12755

❖ **Computing and Simulation Study (supervised by Dr. Rodney Fox)**
Iowa State University, Ames, Iowa, USA Summer 2011
A simulation study in computational fluid dynamic regarding Eulerian two phase flow in fluidization
Duties:

- Composed several OpenFoam codes in Linux (OS)
- Simulated Eulerian two phase flow in fluidization using OpenFoam
- Compiled several literatures for references for results comparison

Skills Gained: Software: OpenFoam and Linux (OS)

❖ **Laboratory Research Study (supervised by Dr. Brent Shanks)**
Iowa State University, Ames, Iowa, USA Fall 2010
A study in a new biorenewable fuel system that contains 2,5-Dimethylfuran (DMF) fuel instead of ethanol fuel. DMF fuel has 40% higher energy density, higher boiling point, and non-soluble in water (less contamination) compared to ethanol fuel. However, DMF fuel had difficulties in the production. Therefore, this research goal was trying to find the right catalyst to drive the production of DMF fuel effectively.
Duties:
- Tested several different catalysts varying in surface areas and compounds
- Measured surface areas through BET device
- Presented the research results and conclusions

Skills Gained: Experiences in producing fuel in laboratory scale

Other Work Experience

- **Mathematic Tutor** June 2007 – June 2008
  Diablo Valley College, Pleasant Hill, California, USA
  Tutored and helped students in their mathematics classes.
  Skills Gained: Strategically communicate and simplify complicated mathematical expressions to students
- **Student Assistant** May 2007 – July 2007
  Diablo Valley College, Pleasant Hill, California, USA
  Handled administration office work in registrar department
  Skills Gained: Understanding in organization management

Volunteer Activities

- **E-week Ambassador** September 2009
  Iowa State University, Ames, Iowa, USA
  Managed and hosted sport competitions during engineering week
  Skills Gained: Leadership and time management
- **Concord Youth Centre** June 2007 – June 2008
  Pleasant Hill, California, USA
  Guided, entertained, and communicated with children and elders
  Skills Gained: Communication to various ranges of age
- **Disability Support Services** June 2007 – June 2008
  Diablo Valley College, Pleasant Hill, California, USA
  Produced lecture notes for disabled students
  Skills Gained: Understanding to cope with people's imperfections and weaknesses

Organizations

International Full Gospel Club 2008 – 2009
Position: Activities Coordinator
Arranged and managed events throughout semesters.
Skills Gained: Leadership and time management

Invitations to Honor Societies through academic merit:

- ✓ **Omega Chi Epsilon**
  Chemical Engineering Honor Society
- ✓ **Phi Sigma Pi**
  National Honor Fraternity
- ✓ **Sigma Alpha Pi**
  National Society of Leadership and Success
- ✓ **Cardinal Key**
  Iowa State University Premier Honorary

Interests and Hobbies

- Automated engineering systems, for example: fully automatic factory production lines or plants
- Electronics, computer and programming, new discoveries and high technology inventions
- Read books to improve and expand knowledge in various topics: engineering, economics, etc.
- Networking and expanding social circles

Reference:

Brent Young
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Murat Balaban
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*****Current employer contact details are available upon request*****

"Hubert is a very quick learner with strong computer skills. During his first year at Custom Controls (he) has become a very competent Applications Engineer with particular expertise in Control valve sizing and selection" **John Sullivan** Managing Director Custom Controls Ltd	*"I am delighted to be able to comment about Hubert. He has very quickly learned our method of control valve sizing and our specialist engineering software and pumps out a good deal of great work. Hubert has developed strong product and engineering knowledge and provides outstanding customer service always with a pleasant and relaxed manner. We are very fortunate to have quality staff like Hubert."* **Paul Papworth** Application Engineer Custom Controls Ltd	*"Hubert was the top student in the course I taught on Food Process Systems Engineering in his master's degree. He did a very good research project in the paper and struck me as a very quick learner, diligent and professional. I am happy to recommend him strongly."* **Dr. Brent Young** Head of Department for Chemical & Materials Engineering University of Auckland