ONG BENG HEE

CONTACT

BIODATA

Date of birth	:	10th of October 1984
Sex	:	Male
Nationality	:	Malaysian

EDUCATION BACKGROUND

University:

- University : National University of Malaysia, Bangi Selangor
- Faculty : Faculty of Engineering
- Program : Bachelor of Engineering (Hons) degree
- Major : Chemical & Process Engineering
- Session : 2005/2009
- Duration : 4 years
- Current CGPA : 3.77/4.00

Pre-University (FORM 6):

- School : SMK Telok Air Tawar , Butterworth Pulau Pinang
- Major : Physics and Chemistry
- Session : 2003/04
- CGPA : 3.84/4.00

Secondary School:

- School : SMK ST. MARK , Butterworth
- Major : Science Stream
- Session : 1997 to 2002
- Duration : 6 years
- Grade : (5-A1, 1-A2, 2-B3,1-5C - Sijil Pelajaran Malaysia - 2002)

PROFESSIONAL AFFILIATIONS

- Associate Member Institute of Chemical Engineers (IChemE)

- Member of Institute of Engineers (IEM)

EMPLOYMENT HISTORY

1. HONEYWELL UOP MALAYSIA SND. BHD.

- Position: **Sr. Chemical Plant Operation Supervisor**
- Duration: Oct-2021 – Current
- **Responsibilities: Membrane & Element Production Plant**

- The role as a manager/supervisor, leading total of 27 production employees which include the technician leads, technicians, process operators and assemblers.
- Responsible for plant production, planning, delivery, inventory management, financial performance to meet the customer demands while maintaining the site HSE and quality requirements.
- Lead the shift lead, technicians, operators, warehouse, logistics, planning, maintenance team to meet the production target and output.
- Establish the SOP & Work Instructions to meet the ISO9001:2015 certification, safety and quality metrics.
- Develop the Bill of Materials (BOM) of new membrane & element.
- Provide training & development of the shift lead, technicians, operators for production of membrane and elements.
- Involve in the recruiting and appraisal for the production team.
- Inculcate the teamwork culture and business acumen mindset to production and supporting teams.
- Lead on the productivity saving projects to achieve the site annual goal plan (AOP) which covers on safety, quality, delivery, inventory and cost (SQDIC).
- Execution of SAP for the production planning, shipment, raw materials purchase requisition & goods receiving.
- Support logistics team on the shipment arrangement, experience in government rules & regulations for the import/export activities and sound understanding of international business trade terms (INCOTERMS).
- Inventory management which includes monitoring of raw materials available and supplies vs. demands
- Manage department budget for KAIZEN, VSM, improvement projects focus on the safety, quality and OEE.
- Responsible for plant troubleshooting activities thru 8D RCCA, RCCA, RPS, pareto and DOE.

- Lead the production team for the yearly value stream mapping (VSM) activities to identify area of improvement.

- Position: **Sr. Chemical Process Engineer**
- Duration: Jul-2019 – Sep-2021
- **Responsibilities: (Project Motion – Membrane Manufacturing Plant Relocation Project from Anaheim, USA to Penang, Malaysia)**

- Acted as UOP Penang site coordinator to support the Engineering team from Shanghai and USA Operation team for the transfer of membrane production line from UOP Anaheim, USA to UOP Penang, Malaysia.
- Attended training in UOP Anaheim, USA (Jul-19 to Aug-19) for membrane manufacturing technology knowledge transfer.
- Participated in the Engineering Design & Technical Review and PHA/HAZOP studies for the membrane plant.
- Supported on import and receiving of the equipment transferred from USA, including managing of contractors at site for the installation activities.
- Involved in FAT (factory acceptance test) for the MCC & rotating equipment prior to the delivery to site.
- Leading the pre-commissioning and commissioning & start-up of the membrane plant in UOP Penang, including setting up of the QC lab equipment membrane performance analysis.
- Managing the contractors and vendors during the building construction and equipment installation.
- **Key achievement on relocation project:**
  In year Jul-2019 to Dec-2020, despite challenges on COVID-19 pandemic (in 2020), successfully in coordination and leading of Membrane Plant Relocation Project from Anaheim, USA to Penang, Malaysia, this included on the pre-commissioning, commissioning start-up of Membrane Manufacturing Plant. With capability of managing and working with multiple engineering disciplines, project team, operations from USA & China to accomplish the project completion on schedule to meet the production of membranes for customers. The project valued USD15mils. The membrane plant is now on smooth operation in Penang.

- Position: **Sr. Manufacturing Engineer**
- Duration: Feb-2018 – Jun 2019

- **Responsibilities: Production & Material Planning for Element Production Plant**

- Responsible for production and materials planning of assembly lines of elements production.
- Ensure timely production materials consumption and goods insurance into SAP system.
- Carried out capacity planning based on demand outlook.
- Supervised the element manufacturing processes to ensure the quality achieves the targeted First Pass Quality.
- Established the Work Instruction / Standard Operating Procedures for the production lines.
- Lead the production team to troubleshoot on the issues in the production line and conduct the RCCA.
- Managed and coordinated products delivery issues and implement the recovery programs as appropriate. Work with suppliers to manage the impact and escalate issues as required.
- Participated monthly stock take and mini cycle counts.
- Lead the production team for the project improvement / saving projects.
- **Key projects achievement:**

  i) Yield (FPQ – First Pass Quality) improvement Project

  - Involved in troubleshooting activities for the failure of finished goods
  - Worked with QA team for the analysis of out specs. finished goods via six sigma tools
  - Involved in the technical evaluation of Quality Light Table (QLT) and Vision System to increase the inspection efficiency, thus increasing the production yield of gas membrane
  - Achievement:

    - Improve FPQ from 84% to 92% (in year 2018)

  ii) Salvage of Membrane Permeate Tubes

  - Provided the technical solution and established the process for the removal of cured epoxy on the membrane permeate tubes surface by using heat treatment
  - Achievement: Recover the cost of membrane permeate tubes from scrap by **USD 80,000 per year**

- Position: **Sr. Manufacturing Engineer**
- Duration: Jul-2017 – Feb-2018
- **Responsibilities: Air Separation Module (ASM) Plant**

- Responsible for plant troubleshooting works on pipeline equipment including, but not limited to: spinning lines, air compressors, pumps, fluid separation equipment, valves, gas measurement and testing equipment, etc.
- Develop strategies and lead cross functional team for plant commissioning and de-commissioning during transition from pilot scale to commercial scale-up plant
- Establish the timeline, manpower planning and costing for transition from pilot scale to commercial scale-up plant
- Improvise work instructions, support for APQP and ISO processes.
- Improve process equipment specifications, process flow, P&ID.
- Perform Process Failure Mode Effect Analysis (PFMEA)
- Participate in PHA and Management of Change (MOC)
- Work with R&D technology team and plant personnel to optimize process, meet business and plant goals (production, cost, quality, HS&E, yield and attainment)
- Develop long term solution to eliminate reoccurring area process problems
- Continuous Improvement in facility and implement best practice in process to optimize manufacturing
- Participate in troubleshooting using six sigma tools

2. TOYO ENGINEERING & CONSTRUCTION SND. BHD.

- Position: **Process Engineer & Commissioning Engineer**
- Duration : Mar-2011 – Jun 2017
- **Responsibilities:**

- Responsible for process design, including front-end engineering design (FEED), basic engineering design (BED) and detailed engineering design (EPCC) and plant commissioning.

- **Process Engineering work** activities include process simulations (PRO-II, HYSYS or TOYO in-house software), development of PFD, P&IDs & mass and energy balances, pipe & equipment/vessel sizing, preparation of equipment datasheets, instrumentation datasheets, equipment lists, line lists, utility consumption list, cause & effect matrix and participation in design reviews & HAZOP studies etc.

- **Commissioning engineering work** activities include pre-commissioning planning such as pipe cleaning (air blow, water flushing, steam blowing etc.), leak test, inerting (air freeing), preparation of operation & maintenance manual, rotating equipment run test and operation functional

test. Preparation of commissioning/start-up procedures and performance test run report and provide training to clients' operation team.

- **Project Experiences:**

Period: Sept 2014 ~ Jun 2017

Name of Client:	Petronas Refinery & Petrochemical Corp.
Project Name:	EPCC For RAPID SCC Project
Position in the Project:	Assigned Process Engineer & Commissioning Engineer (for Benzene Extraction Unit)

Job Responsibilities:

- Provided detailed design for Benzene Extraction Unit (BZU).
- Process engineering activities involved including development of P&ID, PFD, instrument datasheet, wet flare KO drum & steam/condensate system, fire safety assessment list, cause & effect matrix, performed hydraulic calculation for critical lines and participation in 3D Model reviews, P&ID reviews and HAZOP study with clients in collaboration with HAZOP specialist.
- Commissioning engineering activities involved including development of pre-commissioning & commissioning procedures, preparation of operation and maintenance manual. Participation in start-up of BZU and provide training to clients' operation team.

Period: Jul 2011 ~ Jun 2014

Name of Client:	Petronas Gas Berhad
Project Name:	EPCC For Flare Gas Recovery Unit
Position in the Project:	Assigned Process Engineer & Commissioning Engineer

Job Responsibilities:

- Provided detailed design for Flare Gas Recovery Unit (FGRU)
- Process engineering activities involved including preparation of PFD, P&ID, equipment list, utility consumption list, tie-in list, instrument datasheet & equipment datasheet. Process simulation for flare gas recovery unit using PRO-II software for the preparation of mass and energy balance. Performed sizing for knock out drum, pressure relief valve (PSV) and piping. Participation in P&ID reviews with clients and HAZOP study in collaboration with HAZOP specialist.
- Commissioning engineering activities involved including development of pre-commissioning & commissioning procedures, preparation of operation and maintenance manual. Participation in start-up of FGRU and provided training to clients' operation team.

Period: Nov 2012 – Oct 2013

Name of Client:	Petronas Gas Berhad
Project Name:	EPCC for Plant Rejuvenation & Revamp 4 Project
Position in the Project:	Assigned Process Engineer

Job Responsibilities:

- Provided detailed design for Petronas gas plant rejuvenation & revamp.
- Process engineering activities involved including preparation of P&ID for Rejuvenation & Revamp scope of works, instrument datasheet, line list, PSV and piping sizing. Evaluation on the impact of revamp scope (addition of equipment to the existing plant) to its existing blowdown / depressurizing valve thru PRO-II simulation.

Period: Apr 2012 – Oct 2012 (On-Job Training, in Toyo-Japan)

Name of Client:	Far East Petrochemical Company (FEPCO)
Project Name:	Front End Engineering Design (FEED) for Rosneft Steam Cracking Unit.
Position in the Project:	Assigned Process Engineer

Job Responsibilities:

- Provided front end engineering design (FEED) for steam cracking unit.
- Preparation of Equipment Classification for drums, towers, compressors, pumps, heat exchangers, reactors, etc. based on IEC79-20 & NFPA 325.
- P&ID mark-up/checking based on Instrument & Process Equipment Datasheet.
- Involved in desuperheater system design, pipe sizing, development of oily & chemical system drain drums, coolant (Ethylene Glycol/water) system for pump mechanical seal cooling.
- Performed flare header sizing by using NETFLARE (Toyo In-House software) and utility balance (steam, cooling water, etc.).
- Development of Utility Flow Diagram (UFD) for flare, cooling water, steam, plant air & instrument air.

Period: Feb 2012 – Apr 2012

Name of Client:	Bioglycos Sdn Bhd
Project Name:	EPCC for Bioethanol Production Plant
Position in the Project:	Assigned Process Engineer

Job Responsibilities:

- Provided detailed engineering design for bioethanol production plant
- Responsible for material and heat balance preparation and simulation for distillation column, NH_3 separator and scrubber (packed bed column), beer stripper and CO_2 scrubber area in bioethanol production plant using PRO/II simulation.

- Involved in sizing of distillation column, NH_3 Separator and scrubber sizing using Sulcol 2.0.9 (software by Sulzer Chemtech).

Period: Mar 2011 ~ Jul 2011

Name of Client:	Sojitz Corporation
Project Name:	Basic Engineering Design For Silicon Plant
Position in the Project:	Assigned Process Engineer

Job Responsibilities:

- Provided basic engineering design (BED) for silicon plant.
- Development of PID and PFD for Silicon Production, Cooling Water System and Silicon Powdering Process. Preparation of material balance, equipment list and utility consumption list.
- To design the emergency water supply system for plant total power failure case.
- Performed pipe & pump sizing and cooling tower sizing.

Period: Jun 2011

Name of Client:	Huntsman Tioxide Sdn Bhd
Project Name:	Feasibility Study of Tioxide Plant Expansion
Position in the Project:	Assigned Process Engineer

Job Responsibilities:

- Conducted feasibility study for tioxide plant expansion.
- Development of the P&ID for area/sections of expansion.
- Perform debottlenecking study of Ore Milling Section Circulation Fan.

3. ECOLEX SDN. BHD. (FORMERLY KNOWN AS ECOFEED SDN. BHD.)

- Position: **Production Engineer**
- Duration : Oct-2009 - Mar-2011
- **Process Plant Know-how:**

- Spray cooling Plant
- Fractionation Plant
- Calcium Soap Plant

- **Responsibilities:**

- To fine-tune the plant process parameter for best possible efficiency & capacity for various products of different formulation and blending.
- To optimize the plant production capacity based on the monthly major downtime and oil losses reports.

- To ensure all the major supporting equipments (e.g. chillers, compressor, etc.) in tip-top condition by coordinate with Maintenance department on preventive/corrective maintenance issues.
- To prepare production planning to meet shipment schedule.
- To monitor and control the consumption of utilities (steam & electricity) to achieve a minimum production cost with maximum throughput.
- To prepare SOP (Standard Operating Procedure), WI (Work Instruction) and Records for **ISO22000:2005** and **GMP+B2** audit.

- **Experiences:**

- Involved in FAT (factory acceptance test) and commissioning of spray cooling and calcium soap plants.
- Control system experiences: DCS system (Yokogawa CS3000).
- Unit operation experiences: Chiller, compressor, cooling tower, batch reactor, crystallizer, boiler, spray cooling tower, fluidized bed, plate heat-exchanger, filter press membrane filter, cyclone, dust collector.
- Involved in sizing, selection and procurement of pumps, piping, compressed air dryer and control valves for plant improvement projects.
- Set up automatic bagging/packing lines c/w metal detectors for quality control for spray cooling and calcium soap plants.

- **Project Management Experiences:**

i. Reject Oil (for recycle) Storage Tank System
   - Involved in preparing P&ID, sizing, selection and procurement of pumps, piping, valve, steam tracing copper tube, insulation materials for the whole system.
   - Monitored and managed the project from installation works to execution/commissioning the system.

ii. Cleanroom Class 100K Project for spray cooling plant
   - Evaluate and launch tenders/quotations from contractors and check specifications of panel materials, HVAC system and equipments as required.
   - Monitor the project from installation to execution/commissioning works and liaise with contractors to ensure projects are carried out within design as requested.

- **Accomplishment:**

i. Condensate removal at spray cooling tower fluidized bed
   - Assisted the company to design the condensate removal system installed at the spray cooling tower fluidized bed successfully trapping the water condensate/humid formed during cold air supplied to the

fluidized bed. The condensate which affected the product quality was solved. The design helped out the company to increase production capacity and also to reduce the downtime and cost of production.

INTERNSHIP

1. HEXION SPECIALTY CHEMICALS SDN BHD, BUTTERWORTH, PENANG
   - Post: Process Engineer
   - Duration : May 2008 – July 2008
   - Training Program:
     i) Attached to Formaldehyde Plant (4 weeks), Spray Dryer Plants (1 week), Wastewater Treatment Plant (2 weeks), R&D and QC Lab (2 weeks).
     ii) Underwent training on process control, operations, and maintenance jobs for Formaldehyde Plant, Spray Dryer Plants and Wastewater Treatment Plant.
     iii) Involved the laboratory function in R&D and QC lab.

TRAININGS/COURSES ATTENDED

- GMP+B2 Awareness Training (2010) – by NOVO Quality Services
- GMP+B2 Awareness Internal Audit (2010) – by NOVO Quality Services
- ISO 22000:2005 Awareness Training (2010) – by NOVO Quality Services
- SAMSON Control Valve Training (2010) – by Samsomatic (M) Sdn. Bhd.
- OHSAS 18001:2007 Awareness Training (2015) – by Northernville Consultant
- ISO 9001:2015 Awareness Training (2016) – by Sirim STS Sdn. Bhd.
- ISO/IEC 2007: 2013 ISMS Internal Audit Training (2017) - by Sirim STS Sdn. Bhd.

LIST OF AWARDS RECEIVED

University:

- Shell Student Inter-varsity Paper Presentation Contest (SSPEC 2009) – **2nd Runner Up For Poster Presentation Category**
- National Chemical Engineering Symposium Technical Presentation (NACES 2008) – **2nd Runner Up**
- Dean certificate semester I 2008-2009
- Dean certificate semester II 2008-2009
- Dean certificate semester I 2007-2008
- Dean certificate semester II 2007-2008
- Dean certificate semester I 2006-2007
- Dean certificate semester II 2006-2007

- Dean certificate semester I 2005-2006
- Dean certificate semester II 2005-2006

Pre-University (FORM6):

- Top Scorer In SMK Telok Air Tawar In **STPM 2004**
- Malaysia National Chemistry QUIZ 2004 – High Distinction
- Second Top Student, Upper Six 2004
- Top Scorer In Chemistry Upper Six 2004
- Top Scorer In Physics, Upper Six 2004
- Top Student, Lower Six 2003
- Top Scorer In Chemistry, Lower Six 2003
- Top Scorer In Physics, Lower Six 2003

Others:

1st world Zhou Jia Quan Wu Shu & Traditional Lion Dance Championship 1999 (Singapore) – Silver

2nd world Zhou Jia Quan Wu Shu & Traditional Lion Dance Championship 2001 (Malaysia) – Silver

SKILLS AND STRENGTH

- **Languages**: English, Malay and Mandarin
- **Computer literate**: Hysys, PRO-II, VMGSim (iCON), Microsoft Word, Project, Visio, PowerPoint, Excel, Autocad.
- Vast working experiences with various teams and organizations
- To solve problem in teams

BACHELOR'S DEGREE THESIS/RESEARCH

Thesis Title: Biodiesel synthesis from non-edible oils using microwave irradiation

Duration: **2 semester (**July 2008 – May 2009**)**

Research Objectives: Prepare biodiesel conforms both American (ASTM D-6751) and European (EN 14214) standards from non-edible oils (**Jatropha Curcas oil** and **waste cooking oil**) through fast transesterification process enhanced by microwave irradiation.

Research Scopes: Determine the optimum parametric conditions (reaction temperature, reaction, amount of catalyst, reaction time) for microwave assisted transesterification of non-edible oils.

JOURNAL PUBLISHED

1. Zahira Yaakob, ***B. H. Ong***, M. N. Satheesh Kumar, S. K. Kamarudin. 2009. Microwave-assisted transesterification of jatropha and waste frying palm oil. *International Journal of Sustainable Energy*. **28**(4): 195 – 201.