

Holds a B. Tech. in Chemical Engineering and has 13 years of experience in Leading team of 10 process engineers, Feasibility Study, Concept Selection, Basic Engineering, Front End Design Engineering (FEED), Detail Design Engineering (DDE) and PMC of EPC (Green and Brown field) and EMC Projects related to Oil & Gas (upstream On Shore & Off-Shore) including NGL Fractionation & LPG Gathering-Storage, Petrochemicals and Speciality Chemical.

PERSONAL DATA

Nationality : Indian
Birth Date : 03/06/1979
Gender : Male
Marital Status : Married
Residence : Currently Abu Dhabi, UAE

EDUCATION

: B. Tech. in Chemical Engineering from IIT-BHU, 2003

LANGUAGES

Marwadi : Native Language
English : Fluent
Hindi : Fluent

COMPUTER SKILLS

: Windows, MS Office, Internet
: MS Project
: HYSYS (2007.1), UNISIM R390, PVTSIM, ChemCAD, PIPESIM (2009.1), OLGA, TG Net, TL Net Shell Fred, FLARENET, AutoCAD, MathCAD, Matlab

TRAINING COURSES AND CERTIFICATIONS

: Workshop / Training of OLGA 2010 by SPT Group.
: Attended Seminar on Methodology to Establish Plant Remnant Life by Tebodin, Netherland.
: Attended Seminar on NACE organized by PDO-Shell.
: HSE, H2S Awareness, IFR Training by NTI, Oman.
: Training on Yellow belt of Six Sigma Methodology organized by Jubilant Organosys Ltd.
: Training on ISO-14001 & ISO-18000 organized by CII.
: Vocational training at Indian Oil Corporation Limited, Panipat, 2002.

- : Attended Training for Offshore travel, OPITO T-BOSIET & OPITO H2S Training.
- : Received certificate of study of various equipment of utilization of solar energy at Central Arid Zone Research Institute, Jodhpur (India).
- : Certified by IEEE in C++ programming language.

CHRONOLOGICAL EXPERIENCE RECORD

- Dates** : From Nov. 2015 till now
- Employer** : WOOD GROUP KENNY, ABU DHABI
Abu Dhabi Gas Industries, GASCO one of the largest gas processing companies in the world, now operating six mega plants.
- Project** : GASCO Ruwais Area, NGL Fractionation Plant Train-1 & Train-2 Furnace Upgrade Project (EPC Phase) which includes installation of new BMS, CEMS for all furnaces of train-1 & 2 10 in nos. (De-ethanizer, De-propanizer, De-butanizer, ADIP regenerator and Solvent regenerator Furnace), replacement of convection section depropanizer furnaces (2 nos) to meet the requirement of heat flux limit within acceptable range of API 560& Shell DEP, thermal simulation of de-propaniser using FRNC, installation purge nozzle on each furnace (3 nos), 8 nos of purge fan (blower), replacing existing stack damper of each furnace with new one having position feedback, replacement of existing main burner fuel gas supply line valves to with new one, pilot gas line to each burner, provision of tube pigging for de-propanizer furnace and dedicated BMS plc for each train-1 & train-2 and other instrument for hook-up to meet the Project requirement.
- Job title** : Sr. Process Engineer
- Job Description** : Process Engineer in the PMC role involves in the managing various phase of the Projects which includes feasibility, concept, FEED, DDE. To manage other associated activities but not limited to value engineering, HSE studies, integrity studies, reliability studies, risk studies and benchmarking third party design certification (if necessary). To review and approve the contractor documents in the various phases of project to ensure documents are in line with GASCO and international standard. Preparation of the tender document, SOW and technical evaluation of the various contactors during bidding stage. Involvement in the qualifying process the previous phase of project before awarding contract to next contactor in the next phase of engineering pertaining to project. Managing the interphase with various disciplines during review and approval cycle of project's documents & drawings produced by the FEED/EPC contractor.
- Dates** : From Aug. 2015 till Oct. 2015
- Employer** : WOOD GROUP KENNY, ABU DHABI - Seconded to Wood Group PSN Abu Dhabi
Wood Group PSN, a division of Wood Group, is the largest provider of Brownfield services to the oil and gas industry.
- Project** : Bahrain Gas Plant Expansion FEED Project, JV between Tatweer Petroleum and Bahrain National Gas Company. Project Scope primarily in two category installation of new gas plant (CGP-III, by Oxy Huston office, Capacity 350 MMSCFD) and installation of new pipelines & medication of Sitra Storage Facilities (by Wood Group PSN, Abu Dhabi). Wood Group PSN scope is

comprised to carried out FEED of new associated gas / refinery off gas gathering station, pipeline system for Tatweer Petroleum Compression station to new CGP-III, pipeline combined acid gas & residue gas to the existing injection header for re- injection, 4" 21 km butane pipeline to Sitra Storage & Export facility, propane export pump, an additional butane (100000 barrels) & propane (200000 barrels) tanks and expanding the open cycle refrigeration system by adding a third refrigeration train (which includes two stage reciprocating propane compressor, propane economiser, propane accumulator, butane chiller, butane cooler, propane condenser and their inter connecting piping & controls-safeguards).

- Job title** : Sr. Process Engineer
- Job Description** : Process Engineer responsible for preparation of Process Engineering Package including preparation of PFD, Process Safety Diagram, P&ID, Heat and Mass Balance (Simulation Report), Process Calculation (steady state hydraulic, Transient Analysis, flash, sizing of separator, compressors tanks, lines, control valves, relief valves, vessel depressurising, flare header & sub header, flare stack & tip etc. calculations), Equipment and Instrument Process Data Sheets, Basis for Design, Design Philosophy, Input for Cause & Effect Diagram, Engineering Plant Operating Manual for FEED Projects. Also, participation in Design Review, HAZID, HAZOP, SIL and other HSE studies for these projects.
- Dates** : From Sep. 2014 till Aug. 2015
- Employer** : WOOD GROUP KENNY, ABU DHABI
- Projects** :
- Revamping of Water Injection plant in order to meet the future requirement of water injection (1.2 MMWPD) and cooling water (1.7 MMWPD) at central complex offshore facility of ZADCO, Abu Dhabi based on the ZADCO, Shell and international standard. Revamping involves installation of new 40" GRP discharge header of winning pump, tie-in of new header to existing coarse filters, providing double isolation valves and high integrity butterfly valves at discharge header of Winning pumps, replacing existing cooling water bypass control valve with higher size, installation of four dual media filter, replacing existing in efficient vacuum pumps with ejectors with new one to improving de-oxygenation performance of the existing de-aeration tower, adding the logic of 5th HP Water injection pump for the auto start and providing separate backwash control logic sequence for dual media filter and single media filters.
 - Replacement of existing motor driven existing fire water pump with diesel driven fire water pump Complex Offshore Facility at Upper Zakum of ZADCO, Abu Dhabi based on ZADCO, Shell and international standard.
 - Potable Water and Sewage Treatment Plant at Zirku Island Facility of ZADCO in order to future additional requirement of potable water and sewage facility. Project scope is comprised of early RO-UF package to potable water requirement for interim period (4x25% configuration), main portable water plant (RO-UF) of capacity (5385 m3/d with 4X25% configuration), tie-ins to existing potable water unit, storage tank at hill top, distribution with 3 nos. potable water transfer pump, replacement of existing 12.6 km water distribution network with new one, Centralised STP with total capacity of 3240 m3/d based on the media based on bio reactor technology near existing lagoons, de-centralised STP at plant,

airport & army HQ area, collection & distribution network with new main sewage pump station, upgrading existing sewage lift station and replacement of around 5.2 kms of existing gravity & pressure sewage network lines. Part time involvement for this Project.

- Top Side modification for Gas Injection, WAG for hook-up of future wells to meet the target of 750 kBOPD production for ZADCO at Upper Zakhum Central Complex, Abu Dhabi. Part time involvement for this Project specially choke valve sizing.

Job title : Sr. Process Engineer

Job Description : Process Engineer in the PMC role involves in the managing various phase of the Projects which includes feasibility, concept, FEED, DDE. To manage other associated activities but not limited to value engineering, HSE studies, integrity studies, reliability studies, risk studies and benchmarking third party design certification (if necessary). To review and approve the contractor documents in the various phases of project to ensure documents are in line with ZADCO and international standard. Preparation of the tender document, SOW and technical evaluation of the various contractors during bidding stage. Involvement in the qualifying process the previous phase of project before awarding contract to next contractor in the next phase of engineering pertaining to project. Managing the interphase with various disciplines during review and approval cycle of project's documents & drawings produced by the FEED/EPC contractor.

Dates : From Sep. 2011 till Sep. 2014

Employer : WOOD GROUP-CCC LTD, Muscat

Wood Group - CCC Limited (WG-CCC) brings together Wood Group PLC and Consolidated Contractors Company in a joint venture to service the region's oil & gas and petrochemical industries.

Projects :

- Concept Selection of Amal Power Station Phase-3 Project in to achieve optimization type of GTG Machine (two F6FA (ISO Rating-77 MW) versus one F9E GTG (ISO Rating-126 MW)) and steam demand for PDO-Shell EOR Projects from HRSGs.
- BFD of Rima Infill Development Project of PDO-Shell comprises of 7 Nos. MSV, 7 Nos. 8" 5.4 kms bulk headers from MSVs, 12" CSPE combined pipeline to existing 3x24" Pipelines & coriolis meters on individual bulk header & combined 12" pipeline. Objective this upgrade to cater the additional flow requirement for Alkhalata and Amin reservoirs based on PB12 forecast.
- Study Report for Optimization of Greater Birba Well Hook-up with existing Infrastructure of PDO-Shell.
- FEED and DDE of SOGL Pipeline Pressure Impact on Bahja Production Station Project, PDO- Shell.
- FEED of Alkhalata Phase-2 Polymer Injection Project of PDO-Shell, comprises of 19 Nos WI wells, 19 Nos. Polymer injection pumps.
- Concept Selection+BFD+FED+DD of Al Shoumu Well Appraisal Project for PDO-Shell.
- Standardization of High Pressure & High sour service (multiphase flow wellhead) for PDO-Shell, including Concept selection + FEED.
- FEED+DD of Al Noor Unloading Project of PDO-Shell, comprises of three phase unloading separator, slug control valve, OLGA analysis to be carried out on various unloading scenario of Al Noor wells to establish

worst case for slug and adequacy of flare system to be checked due to addition unloading separator in Al Noor production station.

- DD of Condensate Recovery Project of PDO-Shell, comprises of multiphase unit (two stage flash unit + intermediate stage cooler + gas outlet cooler at outlet of 2nd stage flash vessel), ejector package.
- BGS to MMPS oil export pipeline replacement project of PDO-Shell, comprises of 24 kms export GRE pipeline and transient analysis on TLNet to be carried out to establish design pressure of GRE pipeline.
- Scrubbers Replacement Project of existing three stage Reciprocating MP Compressor for Shell- PDO.

Job title : Lead Process / Concept Engineer (with CV is approved for Lead Process Concept Engineer position from PDO-Shell)

Job Description : Leading process team of 10 comprises of 2 Junior Process Engineer, 4 process engineers, 4 Sr. Process Engineer. Carry out feasibility studies for the various gas and oil development projects. Carry out conceptual studies for projects to maintain and expand the existing Oil & Gas supply and transportation system, as required. Include lifecycle cost and economic analysis as part of the conceptual study work. To prepare Asset Development Plans to document the concept selection, cost and execution strategy, as appropriate. Preparation of Technical scope of work and CTRs for project and establishing the requirements for deliverables. Reviewing of Schedules. Participate in VARs for other projects and provide the necessary process engineering support. To coordinate design activities carried out by others (in-house or via other parties), reviewing/checking the documents produced by process teams working under me. Pursue new technology opportunities. Propose and execute design integrity review activities for the Oil & Gas Assets as appropriate. Maintain up-to-date process models of facilities and transmission system. Identify & pursue opportunities to optimize utilization or debottleneck existing assets as appropriate. Provide process input to field change proposals (FCP's). Provide process discipline support to Oil & Gas engineering projects. Execute work in accordance with the company's HSE management system. Specific accountabilities are set out in the PDO HSE Policy (Major Client) and other client HSE Policy. To coach Omani/Expat Graduate Process Engineers. Participate in PEER, Design, HAZIDs, HAZOPs, IPF and other HSE-related reviews.

Dates : From Apr. 2007 till Aug. 2011

Employer : MOTT MACDONALD & CO. L.L.C, Muscat

The Mott MacDonald Group is a diverse management, engineering and development consultancy delivering solutions for public and private clients world-wide. It is one of the largest Oil & Gas Consultancy (ISO 14001 & OHSAS 18001 certified) at Middle East.

Projects :

- Concept selection and FEED of North Star Plant of OGC (Gas Capacity 45 MMSCFD, Oil Production 40000 bpd; Comprises of Three Production Separators, SRU, Desalter, Crude Stabilizing Column, Gas Sweetening Unit, Production Compressor, Gas Dehydration Unit, Skim Tank, etc.).
- FEED and DDE Mabrouk Central Gathering station (Gas Capacity 2.5 MMSCMD, Liquid Capacity 10000 m3/d; Comprises of Two Bulk Separators, Three Test Separators, Production & Gas lift compressors, Drain/Flare Knock out vessel, Flare system, Instrument Air and Chemical Injection skid) in co-ordination with Shell EPP, Aberdeen.
- FEED of South Pars Phase 11 (Raw Gas Handling Capacity 2.0

BSCFD, Condensate Handling Capacity 80000 BPSCD; Comprises of 2x inlet manifold, 2 x pig receiver, 2x2500 m3 slug catcher, 5x25% MEG regeneration unit, sour water stripper 2x60%, 1x50% back-up stabilization column, 1x10000 m3 off spec cond. Storage, 4x60000 m3 condensate storage tank, utilities, 2x50% HP/LP flare system, HP Separation, Gas Heater, 2x55% Condensate Stabilization and Sour Gas metering facilities) in Coordination Total & CPE for final client NIOC.

- FEED of AH Gas Wells, it includes Fluid Characterization of AH gas wells (3 Nos) based on PVT lab analysis on using C7Plus tool of HYSYS (& UNISIM), slug analysis of DSS line carrying gross well fluids on OLGA and performing hydraulic calculation on PIPESIM, P&ID, Basis of design and OCSP.
- Concept Selection, FEED and DDE of Remote Manifold Station comprises of three MSVs, one test separator, production trunk line and water injection manifold and lines up to the well with well fracture control of North area of PDO-Shell, Oman
- FEED of Interconnecting Pipelines for Stabilization Plant (Comprises of three pipelines, a slug catcher at SNCP) in co-ordination with GS E&C, Seoul for final client PDO-Shell.
- Detail Hydraulic calculation of ESP lifted well's flowlines (three phase flowline) and their hook-up to MSV and Gathering Facilities in PIPESIM Software and preparation study report to resetting well high-high pressure trip for Musallim Area of PDO-Shell.
- DDE of Facility Expansion of Marmul Production Station, PDO-Shell, Oman. It comprises of installation of Bulk Separator, Dehydration Tank, Concentric Wash / Crude Storage Tank, Crude Oil Indirect Fired Heater and Water Booster Pumps.
- FEED and DDE of Water Injection Facility for Water Injection Wells of LPS, PDO-Shell, Oman.
- FEED and DDE of Two Phase Vertical Separator for Government Gas Plant of Yibal Area, PDO-Shell, Oman.
- FEED and Detail Engineering of Gas Dehydration System SAIHRAWL CPP, PDO-Shell, Oman.
- FEED & DDE of Three phase Test separators and their connecting piping & control network for Fahud Production Station, PDO-Shell, Oman.
- DDE of Fire Fighting System of Quarn Alam Production Station of PDO-Shell, Oman.

Job title : Process Engineer

Job Description : Process Engineer responsible for preparation of Process Engineering Package including preparation of PFS (PFD), PSFS, PEFS (P&ID), Heat and Mass Balance (Simulation Report), Process Calculation (steady state hydraulic, Transient Analysis, flash, sizing of separator, compressors tanks, lines, control valves, relief valves, vessel depressurising, flare header & sub header, flare stack & tip etc. calculations), Equipment and Instrument Process Data Sheets, Basis for Design, Operation, Control & Safeguarding Philosophy, Input for Cause & Effect Diagram, Engineering and Operation Reference Document, WINPCS and Plant Operating Manual for EPC / EMC Projects. Also, participation in Design Review, HAZOP and IPF studies for these projects.

- Dates** : From 2004 till 2007
- Employer** : JUBILANT ORGANOSYS LTD, GAJRAULA
It is the largest speciality chemicals company (ISO 14001 & OHSAS 18001 certified) in India and having a global scale manufacturing in defined chemical categories.
- Projects** :
 - Associated with project of 70 TPD capacity Acetic acid Plant (Green Field EPC Project) for Concept Selection, FEED, DDE (in coordination with Jacob H&G, Delhi), Material procurements (Budgeted Cost: INR.130 million, Completion cost: INR.120 million).
 - FEED, DDE (in coordination with Jacob H&G Delhi) and Procurement for Export Unit (Green Field EPC Project) of Pyridine (Capacity 12000 TPA & Budgeted Cost: Rs.600 million, Completion Cost: Rs.570 million).
 - FEED, DDE and Procurement for ASC / DKT Plant (Capacity 500 TPA & Budgeted Cost: INR.260 million, Completion Cost: INR.250 million).
 - Associated in basic design, coordination of installation & commissioning of Batch Reactor with column, CIP & Scrubber system for Kilo Lab Plant (Multi Product).
 - Process Designing and Project Management of Hydrant Expansion plant (Budgeted Cost: Rs.25.1 million, Completion cost: Rs.23 million).
 - Involved in technical & commercial evaluation related to Procurement of instruments, control valves, vessel, compressors, pumps, columns, N2 Gas Plant, Cooling tower, Sewage Treatment Plant, Zero Discharge Plant, motor, Cage Hoist, etc. from vendor for various EPC & six – sigma projects.
- Job title** : Assistant Manager (Process Design) - Technical Services Dept.
- Job Description** : Process Engineer in Technical Services Department is responsible for all aspects of chemical process design and project implementation for various chemical facilities projects (EPC), including Project feasibility, Project costing, Mass and Heat balance (simulation report), PFD, P&ID, Process Calculation (hydraulic, flash, sizing of column, heat exchanger, compressors, tanks, lines, control valves, relief valves and vessel etc), Equipment and Instrument PDS along with Requisition. Reviewing all aspects of design and construction for consistency and safety, including leading HAZOP and pre-start-up safety (PSSR) reviews.
- Dates** : From 2003 till 2004
- Employer** : GHARDA CHEMICALS LIMITED, PANOLI
It is a research-based the chemical industry and has many firsts in the field of dyestuffs, agrochemicals and polymers (ISO 9001-2000, ISO 14001-2004 & OHSAS 18001-1999 Certified) in India.
- Job title** : GET, Process Design and Technology Transfer
- Job Description** :
 - Heat and Mass Balance of process equipment of polymer plant.
 - Preparation of PFD and P&ID.
 - Designed a Hot oil system for in Semi-commercial Polymer Plant.
 - Day to Day monitoring critical process parameters for Polymer Plant PSS, MPSS, MPES, and PPSU.
 - Co-ordination with R&D team for launching new processes in Pilot, Semi-commercial level.
 - Reduced the machine downtime by replacing DMAc +Toluene solvent system by sulfolane solvent in PPSU preparation, resulting in higher

productivity.

- Trouble shooted recovery system's distillation column, achieving increased recovery rate by 200 kg/hr.

Field of experience :

- Preparation SOW (Scope of work) & SOR (Statement of Requirement).
- Preparation of CTR.
- Review schedule of Project. Control discipline budget & schedule on raising DCN, PCN & FCN related to projects as when required to do so.
- Prepare & review discipline deliverables for team under my supervision.
- Also mentoring & guiding process team related to project activities to deliver the process deliverables as per company policy & international standard as when required to do so.
- Responsible for timely progress and completion of process discipline deliverables in operate phase in compliance with DCAF and DEM requirements.
- Provide discipline support to other disciplines, to resource planning and project planning.
- Active Participation in Project kick-off meeting, PEER, Design Review, post order vendor kick-off meeting, QRA, HAZOP, HAZID, ENVID, OHRA, SIL (IPF) Review, LOPA SIMOPS and other HSE reviews.
- Preparation PFS, PSFS and PEFS (P&ID).
- Well Fluid Characterisation by using C7PLUS tool on HYSYS, UNISIM and PVTSIM.
- Heat and Mass balance, Flash calculation, finding Hydrate formation temperature and pressure of hydrocarbon on HYSYS version 2007 and UNISIM R390.
- Hydraulic Calculation for three phase flowlines from ESP, Naturally flowing wells and production pipelines / piping using PIPESIM (V-2010.1).
- Slug Analysis of three phase production trunk pipeline and unstabilised condensate pipeline on OLGA (version, 2010, 7 & 6.3.0.2) to calculate number of slug, maximum slug volume during ramp-up, ramp-down, pigging and normal operation of pipeline.
- Surge Analysis of 25 kms, 10" oil export GRE pipeline on TLNet to establish Design Pressure of pipeline.
- Surge Analysis of Stabilised Condensate and Produced Water Network on TLNet to establish Design Pressure of interconnecting pipelines.
- Surge Analysis of 10" fuel line to Power Station in TGNet to establish Design Pressure of 10" fuel line.
- Two & Three phase separator designing based on Shell DEP.
- Pressure Vessel & Tank Sizing based on ASME Std.VIII, API and Shell DEP.
- Heat Exchanger & Column Sizing.
- Relief Valve Sizing based on API 520, 521 and 526.
- Line, Control Valve and Pump Sizing.
- Compressor settled out calculation, and sizing of suction scrubber, discharge scrubber and anti surge control & capacity control system for compressor.
- Flare network sizing on FLARENET, which include optimisation of size of tail pipes, sub headers, main flare header, flare stack and flare tip size.
- Dispersion & Radiation calculation for flare stack, relief pit and drain pit

in Shell Fred.

- Depressurisation calculation using Depressurisation Dynamic Utility of HYSYS and UNISIM.
- Design of Fired heater for De-Propaniser following GASCO, API 560 & Shell DEP standard.
- Inbreathing, outbreathing and thermal venting calculation based on API 2000.
- Concept Selection of Amal Power Station Phase-3 Project.
- Concept Selection and FEED of North Star Plant (Complete Oil & Gas Facility) based on Shell, OGC & International Standards.
- FEED of South Pars Phase 11 based on CPE, Total and NIOC Standard.
- FEED and DDE of Mabrouk Full Facility Development Project (Complete Oil & Gas Facility) based on Shell, PDO and International Standards.
- Designing of Gas Dehydration System including Mercury Removal System / Trap based on Shell, PDO and International Standards.
- Designing and Concept Selection of Gas Sweetening, Gas metering system.
- Designing of Condensate Stabilisation unit.
- Designing of Water Injection Pump Network for Water Injection Wells with fracture control based on Shell, PDO and International Standards.
- Revamping of the existing Water Injection Plant in order to meet the future requirement of water injection and cooling water at Central Complex Offshore Facility at Upper Zakum of ZADCO, Abu Dhabi based on ZADCO, Shell and international standard.
- Replacement of existing motor driven existing fire water pump with diesel driven fire water pump Central Complex Offshore Facility at Upper Zakum of ZADCO, Abu Dhabi based on ZADCO, Shell and international standard.
- FEED, DDE and Commissioning of 70 TPD Acetic Acid Plant, 1200 TPD Pyridine (Export Unit) and ASC & DKT Plant and Hydrant System based on International Standards.
- Carrying out of Batch reaction in pilot, semi-commercial and commercial level of Polymer division. Co-ordination with R&D personnel launching new polymer making processes in pilot and semi-commercial level.
- Fully conversant with process engineering work methods, multi-discipline interfacing, technical support for procurement function.
- Familiar with SHELL (including SHELL HSE code & standards), PDO code of practices (DEPs, ERDs, SPs and EPs), ZADCO & GASCO Standards, GPSA, Total, CPE and International Design and Construction Standards (API, ASME, ANSI etc.).
- Coordinating with equipment and material vendors and construction contractors to insure timely delivery of equipment and effective project implementation.
- OVERSEAS BUSINESS TRIP AND DEPUATION:
 - HAZOP meeting of Mabrouk Full Facility Project at Shell Global Office, Aberdeen.
 - HAZOP meeting of SNCP Pipelines FEED Project at GS E&C office, Seoul, South Korea.

PAPER PRESENTATION:

Paper Presentation on the efficiency Cu-Mo and Vanadium Pentaoxide catalyst vs. various catalyst supports and promoters in American General.