

Resume **(Shiv Shukla Chemical 1986, IT-BHU)**

Name : Shiv Shukla
Position & Title : CEO
Age : 43
Educational Qualification : B. Tech. (Chemical Engg.), M.B.A.
Language Skills : English, Hindi, Marathi

Professional Experience & Employment History

Years of Experience :

Total	:	21
CEO	:	3
Marketing	:	6
Project Mgmt. & Design	:	9
Plant Operations	:	3

Details of Experience

❑ C.E.O.

- Chief Executive Officer of MECS Enterprises Pvt. Ltd. Since March 2004.

❑ Marketing Experience

Major achievement was to diversify outside of sulphuric acid projects into phos acid business. Besides bagging several projects for sulphuric acid plants, bagged contracts for turnkey projects for phos acid concentrator, fumes scrubber etc.

❑ Design Engineering & Project Management

- Basically a process engineer having designed more than a dozen sulphuric acid plants, liquid SO₃, oleum, chlorosulphonic acid plants, and SSP plants. Have worked on 30 TPD to 3000 TPD Sulphuric Acid plants – design/revamp. Developed Recycle Gas Process for Sulphuric Acid plant. Handled a number of sulphuric acid, chlorosulphonic acid, SSP projects.

❑ Commissioning

- Commissioning of Sulphuric Acid plants -

I) Nirmal Chemical Works	400 TPD	1989
II) Rourkela Steel Plant	60 TPD	1991
III) Indian Rayon	72 TPD	1989
IV) Transpek Industries,	120 TPD	1993
V) Atul Products	180 TPD	1994

VI) Atul Products	150 TPD	1989
VII)Tungabhadra Fertilizers	70 TPD	1995
VIII)Varinder Agro-Chemicals Ltd.	300 TPD	1996
IX) Atul Products Ltd., (Chlorosulphonic Acid Plant)	100 TPD	1994

❑ Overseas Experience

2 Months at Alexandria Carbon Black Co., Egypt, worked on developing QS-9000 documents and was ISO-9000 Internal Auditor.

❑ Plant Operations

➤ Worked in a refinery Aromatics Complex having following units :

1. Feed Preparation Unit
2. Catalytic Reforming Unit
3. Aromatics Unit for Benzene & Toluene
4. Nitrogen Plant
5. Hexane and SBP Solvent Units.

➤ The complex had strength of about 60 operators working in 3 shifts under Operations Officer.

➤ Major Process Equipment handled include Distillation Columns, Liquid-Liquid Extraction Columns, Catalytic Reforming Reactors, Various Heat-Exchangers and Condensers, High Speed Condensing Steam Turbines, High Speed Centrifugal Compressors, Positive Displacement Compressors, Fired Heaters & Furnaces etc. For process control purpose the complex had DCS system and supervisory computer control systems.

➤ Received letter of appreciation from Director (Refinery) for fire fighting during a major fire in Aromatics Tank farm area in Nov 1988. I worked in the team for reconstruction and start up of Aromatics Unit after this major fire.

❑ Major Achievements

➤ Papers Published / Presented Internationally

1. "*New Orientations for Indian Sulphuric Acid Industry*", published in British "Sulphur" journal July 1992 issue.
2. "*A Comprehensive CAD System for Sulphur Chemicals Industry*", presented at "**Sulphur'93**" during 4-7th April 1993 at **Hamburg**, Germany.
3. "*An Integrated Process for manufacturing Chlorosulphonic Acid and Liquid SO₃*" presented at "**ACHEMA'94**" during 4-11th June 1994, at **Frankfurt**, Germany.
4. "Improved Product Mix design to Produce Liquid SO₃" co-authored for presentation at "Sulphur'94" during October 1994 at Tampa, USA
5. "*A New Look Acid Plant - Sans Gas Heat Exchangers*", co-authored for presentation at "Sulphur'95" during 15-18th October 1995 at Abu Dhabi.
6. "*Lowest Emissions at Lowest Cost! A Complete Sulphuric Acid Plant Concept Using Gas Recycling*" presented at "**Sulphur'96**" during 20-23rd October 1996 at **Vancouver**, Canada.

7. "Revamping at Coromandel Acid Plant" presented at "**Sulphur'2001**" during 14-17th October 2001 at Marrakech, Morocco.
8. "*Increased energy recovery in a Sulphuric Acid plant by heat recovery system (HRS)*" presented at **IFA Technical Conference 2002** during 24th-27th September 2002 at Chennai, India.
9. "*Coromandel Acid Plant Revamping Phase-II*", presented at **Sulphur'2002** during 27th-30th October 2002 at **Vienna**, Austria.
10. "*Sulphuric Acid Plants – Outlook in India*", presented at **Sulphur'2004** during 24th-27th October 2004 at **Barcelona**, Spain.
11. "Update on *Sulphuric Acid Outlook in India*", presented at **Sulphur'2005** during 23rd-26th October 2005 at **Moscow**, Russia.

➤ **Software Packages Developed**

1. "**Sulphuric**": A software package developed for design and simulation of plants producing Sulphuric Acid, Oleum, Liquid SO₃, Chlorosulphonic Acid etc. This package has capability of working out complete material & energy balances and Design & Simulation of various process equipment viz. Heat Exchangers, Absorption Towers, Reactors for these plants. This package was originally developed using object-oriented Turbo-Pascal 6.0 compiler of Borland. Now this has been modified for Windows95 / Windows NT platform using Delphi 3.0. This is engineering software used for design of chemical plants. Some of international companies which had shown interest in this software include Earth-tech, Indiana, USA; Rotem Amfert Negev Ltd., Arava, Israel; Minproc Engineers Pty Ltd., Sydney, Australia. Since this is engineering design software, it essentially has lot of mathematical modelling, optimization techniques, and numerical analysis. The paper, which I presented in Sulphur93, was on these aspects.
2. "Project": Software for project management based upon Critical Path Method. This software has the capability of establishing CPM network for a project, scheduling of various activities and resources, optimizing resource utilization and allocation, optimized crashing of activities for reducing project time.
3. "Invent": Inventory Management Software package. This software has the capability of defining products consuming various components, maintaining component & product inventory; product delivery, component receipt, component processing registers; customer addresses, sales tracking to various customers during various periods; invoice printing.
4. Software to analyze recirculation ratio of waste heat boiler system for M/s Coromandel Fertilisers Ltd., Visakhapatnam, India, developed in 1992.
5. AutoLISP programs for managing P & I Diagrams, Valve Counting, Pipe line pressure drop Analysis, Line counting. These software programs are used with AutoCAD for engineering work of chemical plant designs.
6. **Cost Estimation**: Developed software for estimation of total cost of a project. This cost estimation is done by a group of engineers from various disciplines working together on the same set of data. This needs simultaneous access to data over LAN. Back end database MS-SQL and front-end application is developed in Delphi.
7. **Timesheet**: Developed this software for keeping track of man-hours being spent on various

projects and activities by various categories of persons. Back end database is on Paradox and front-end application developed in Delphi.

➤ **Project Management & Design Engineering – Major Projects**

No.	Project Details	Role
1.	30 TPD Chlorosulphonic Acid Plant for Gharada Chemicals Ltd., Panoli, Gujrat. Duration : May 1996 to March 1997	Overall responsibility for complete turnkey project including Process Design, Detailed Engineering Design, Drawings preparation, Project Management, Procurement.
2.	250 TPD Sulphuric Acid Plant for Andhra Sugars Ltd., Kovvur, Andhra Pradesh Duration : Nov. 1995 to March 1997	Overall responsibility for complete project of detailed engineering including Process Design, Detailed Engineering Design, Drawings preparation, Project Management.
3.	250 TPD Sulphuric Acid Plant for Varinder Agrochemicals Ltd., Ludhiana Duration : June 1996 to March 1997	Overall responsibility for complete project of detailed engineering including Process Design, Detailed Engineering Design, Drawings preparation, Project Management.
4.	3000 TPD Sulphuric Acid Plant Revamping for Industries Du Chimiques, Darou, Senegal, West Africa Duration : Aug 1995 to March 1997	Plant Operation Analysis for debottle-necking to increase plant capacity Basic Engineering & Detailed Equipment Process Design including Process Flow Diagram preparation, Material & Energy balances, P & I Diagram preparation, equipment sizing, specifications.
5.	140 TPD Sulphuric Acid Plant for PT Indo-Bharat Rayon, Indonesia Duration : Oct 1996 to March 1997	Process Engineering Design including Process Flow Diagram preparation, Material & Energy balances, P & I Diagram preparation, equipment sizing, specifications for equipment/instruments. Stress Analysis of high-pressure steam piping.
6.	120 TPD Chlorosulphonic Acid Plant for Atul Products Ltd., Atul, Gujarat Value : Rs. 100 Million Duration : Dec 1993 to March 1995	Basic Engineering Technology Development & Detailed Equipment Process Design including Process Flow Diagram preparation, Material & Energy balances, P & I Diagram preparation, equipment sizing, specifications. Procurement: Floating enquiries, obtaining quotations, vendor offers evaluations and order finalization. DCS System: System selection, design & implementation of control loops, sequence controls. Project Management: planning & monitoring.
7.	120 TPD Liquid SO ₃ and Oleum Plant for Transpek Industry Ltd., Baroda Value : Rs. 100 Million Duration : March 1992 to Dec 1994	Basic Engineering Technology Development & Detailed Equipment Process Design including Process Flow Diagram preparation, Material & Energy balances, P & I Diagram preparation, equipment sizing, specifications. Procurement: Floating enquiries, obtaining

- quotations, vendor offer evaluations and order finalization.
8. 1350 TPD Sulphuric Acid Plant for Gujarat State Fertilizers Co. Ltd., Baroda
Value : Rs. 400 Million
Duration : Aug 1989 to March 1992.
Basic Engineering & Detailed Equipment Process Design including Process Flow Diagram preparation, Material & Energy balances, P & I Diagram preparation, equipment sizing, specifications.
Procurement: Floating enquiries, obtaining quotations, vendors offer evaluations.
 9. 400 TPD Sulphuric Acid Plant for Nirma Detergents
Value : Rs. 80 Million.
Commissioning of complete plant during Dec 1989