



# VINOD SHETH

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## PERSONAL INFORMATION

<b>Name</b>	Vinod Mansukhlal Sheth
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<b>Marital Status</b>	Married
<b>Children</b>	One Son
<b>Hobbies / Sport</b>	Astrology(non-professional), Reading, Travel, Music, Cricket, Badminton, Bridge
<b>Languages</b>	Can Read, Write & speak English, German, Hindi & Gujarati

## ACADEMIC QUALIFICATION

Passed B.Tech. Chemical Engineering with 64.7% marks from Institute of Technology, Banaras Hindu University, Varanasi, in the year 1972.

## AWARDS / FELLOWSHIP / SCHOLARSHIP

<b>Awards</b>	Received "PRIZE AWARD FOR INVENTION AND TECHNOLOGY TRANSFER OF ABRASIVE SILICA "from NRDC – NEW DELHI, In the year 2005.  Awarded "CSIR TECHNOLOGY AWARD" in the year 2002, by CSIR - NEW DELHI For Zeolite –A Technology development & successful commercialization.
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Awarded wipo - Gold Medal By World Intellectual Property Organization Unido, for the Development of ZEOLITE – A (detergent grade) technology using Alumina refinery liquor, in the year 1998.

Awarded "NRDC – Technology" Award for ZEOLITE – A technology by National Research Development Corporation - New Delhi in the year 1997.

Awarded "Technology Award - CSMCRI" for ZEOLITE – A technology by Central Salt and Marine chemicals Research Institute Bhavnagar In The Year 1996.

#### **Fellowship**

I was getting fellowship from Baden - wurtemberg state / DAAD - west Germany for 15 months - while attending the 15th International seminar Programme in chemical Engineering at the university of karlsruhe, West Germany (from 1st May 1979 to 15th July 1980).

#### **Scholarships**

I was getting Inter-state scholarship from Government of Gujarat during 5 years of my chemical engineering studies at IT BHU, Varanasi. (From 1967 to 1972)

## **DETAILS OF WORK EXPERIENCE IN CSMCRI**

### **(A National Laboratory of Council of Scientific & Industrial Research – Govt. of India)**

I have worked for nearly 23.5 years in Central Salt and Marine Chemical Research Institute (CSMCRI), Bhavnagar- a national laboratory of council of Scientific and Industrial Research - Govt. of India and carried out Research and Development work on specialty Inorganic chemicals related to silica, Silicates, Zeolites, & Minerals.

#### *Details of position held in CSMCRI, Bhavnagar from Aug. 72 to Jan. 1996*

<b>Name of the Institute</b>	<b>Post Held</b>	<b>Dt. of Joining</b>	<b>Date of Leaving</b>
<b>Central salt &amp; Marine Chemicals Research Institute, Bhavnagar</b>	Jr. Res. Fellow	Aug.'72	Oct.'73
-Do-	Scientist-B	Nov.'73	Oct.'78
-Do-	Scientist-C	Nov.'78	Oct.'84
-Do-	Scientist-EI	Nov.'84	Oct.'90
-Do-	Scientist-EII	Nov.'90	Oct.'95
-Do-	Scientist-F (Deputy Director)	Nov.'95	Feb.'96

### *Processes / Products Developed*

While working in CSMCRI, following products are developed by me. The developmental work includes process parameters optimisation studies on lab / pilot scale, project report preparation, Market survey, Techno- economic feasibility Report preparation and demonstration of know how developed to interested entrepreneurs.

### *List of processes / products developed while working in CSMCRI*

- i. Heat transfer tube {specially shaped}
- ii. Precipitated / Activated Calcium Carbonate from Lime and Flue gases by continuous carbonation process (all grades).
- iii. N.F. Grade Magnesium Hydroxide {pharmaceutical grade}
- iv. Light basic Magnesium carbonate by Carbonation Process (Cosmetic grade)
- v. Thermal insulation moulds from wollastonites and siliceous earth mineral (ISI grade).
- vi. Aluminium Silicate {equivalent to Sipernat 820A of degussa grade}
- vii. Sodium Aluminium silicate {Detergent Grade Zeolite-A}
- viii. Precipitated Silica using acidic effluent from an industry
- ix. Precipitated silica {Ulrasil-vn-3 grade equivalent}
- x. Aluminium Hydroxide Gel. I.P. powder
- xi. Organo-Clays for grease (high temp) and paint formulation
- xii. Colloidal Silica {30 % concentration}
- xiii. Pottasium silicate {Electronic grade}
- xiv. Alumina hydrate (ink grade)
- xv. Zeolite-A (detergent grade) from alumina refinery liquor

### *Publications while working in CSMCRI*

1. 'Pneumatic drying - heat and mass transfer studies' V.M.Sheth, B.M.Shah and S.D.Gomkale, presented at National Heat and Mass Transfer Conference which was held in Nov. 1977 at Roorkee.
2. 'Desalination by Distillation', S.D.Gomkale and V.M.Sheth presented at the meeting of Academic science, which was held in 1977 at Rajkot.
3. 'Untersuchungen zu einer neuen methodes zur bestimmung des Abschedeigenschaften for filter'. V.M.Sheth, R.Hiller and F.Loffler presented in the concluding session of the International seminar in chemicals Engg. & Phy. Chemistry which was held at the University of Karlsruhe, West Germany. In July 1980.
4. 'Desalination by distillation techniques – A Report of work carried out at CSMCRI. Bhavnagar' V.M.Sheth, R.K.Sapre, and S.D.Gomkale, presented in the Seminar on Exploitation of Sun, Sea and Shore - Retrospect and prospect which was held on, 30- 31, December, 1980 at CSMCRI Bhavnagar.
5. 'Recent development on Calcium Silicate based thermal insulation' V.M.Sheth, Miss M.R.Bhatt, K.N.Patel and V.P.Pandya presented in the seminar for the chemical resistant ceramics for petroleum, petrochemicals, Fertilizer and other chemical process industries held in New Delhi, March 1984.
6. 'Hydrocyclone Technique to upgrade Bentonite clay Mineral' H.M.Dave, Miss M.R.Bhatt, V.M.Sheth and V.P.Pandya presented in National Symposium on clay organic Interactions and Fifth Annual Convention which was held on 8-9th Nov. 1986 at Collage of Agriculture, Calcutta University, Calcutta.
7. 'Treatment of low grade bentonite for enrichment of montmorillonite by Hydrocyclone' H.M.Dave, V.M.Sheth and Dr. V.P.Pandya, presented in Clay Mineral Society of India Conference, Which was held in Bhubaneshwar on 22-23 Nov. 1988.
8. 'Development of Calcium Silicate based insulation moulds' V.M.Sheth, Miss M.R.Bhatt, Shri K.N.Patel and Dr. V.P. Pandya Research & Industries, Vol.35, June 1990 pp. 121-123.
9. 'Project profile on precipitated silica a versatile rubber filler' V.M.Sheth & Dr.V.P.Pandya Rubber reporter (annual), CWW. Vol. No.15 No.1 page-9 May/June/1990.
10. Project profile on Aluminium Hydroxide Gel. (I.P) Powder, V.M.Sheth & Dr. V.P.Pandya CEW Vol. XXV No.9 Sept. 1990 p. 27-29.
11. 'Calcium chemicals from waste shells' Miss M.R.Bhatt, V.M.Sheth & Dr. S.D.Gomkale, Research & Industries Vo. 35, Dec. 1990 p. 219-222.

12. 'Studies on hydration of Sojat, Lime and its effect on physical properties of calcium carbonate' Miss M.R.Bhatt, V.M. Sheth and Dr. S.D.Gomkale Research & Industry. Vol. 36, June 1991, page 102-104.
13. 'Hydorcyclone - versatile tool for the up gradation of bentonite' Dr. H.M.Dave, Dr.R.S.Somani, V.M.Sheth and Dr. V.P.Pandya, clay research, vol.9 p. 44-47.
14. Chemical product survey-thermal insulation moulds from wollastonite mineral CEW. Vol.XXVI, No.10, Oct.1991, p. 25-28.
15. Project profile on 'Sodium Aluminium Silicate - Detergent grade Zeolite'. Chemical Weekly Vol. XXXIX, Oct. 26, 1993 No.8, p-117.
16. Project profile on "Sodium Aluminium Silicate – Filler / Pigment Grade" Chemical Weekly Vol. XXXIX, Nov.2, 1993 No. 9, p.131.
17. "Synthetics of Zeolite from silicones earth for use in detergent" R.S.Somani, P.M.Oza and V.M.Sheth Presented in national symposium on clay in relation to environment and industry organized by CMSI in 1994.
18. Project profile on "Magnesium Hydroxide N.F. Grade" Miss M.R.Bhatt, V.M.Sheth, Dr. S.D. Gomkale Chemical Weekly Vol. XL, Jan-31-1995, No. 22 p-153.

#### *Patents taken while working in CSMCRI*

- I. "A technique to produce granulated Magnesium Hydroxide"
- II. "An improved process for the manufacture of precipitated silica at ambient temperature using hydrochloric acid".
- III. "The new improved process for the preparation of Aluminium Hydroxide Gel powder having antacid properties."
- IV. "A process for the preparation of an amorphous sodium alluminium silicate powder useful as property enhancer in filled compositions."
- V. "An improved process for the preparation of aluminosilicate gel useful for the manufacture of detergent grade zeolite."
- VI. "An improved process for the manufacture of detergent grade Zeolite from alumino silicate gel."
- VII. "An improved process for the preparation of iron oxide PIL clay from Indian Clay."
- VIII. "Process for the manufacture of Zeolite – A from Alumina refinery liquor"

### *Technical assistance given to the industries while working in CSMCRI*

1. Exploratory experimental work was carried out for the recovery of calcium Carbonate from the waste mud supplied by Dhrangadhra chemicals Works Ltd. Dhrangadhra.
2. A successful sponsored project work was carried out to develop a process for the production of precipitated Calcium Carbonate from Acetylene Waste mud, which was offered by M/s. Asiatic Oxygen Ltd. Thane.
3. Collaborative testing of corrugated tubes supplied by us is successfully carried out at M/s. Larson Turbo Ltd., Mumbai.
4. A successful sponsored work was carried out to develop a process for the production of Sodium Alluminium-Silicate (detergent grade) which was sponsored by M/s. Gabriel Chemicals, Bhavnagar.
5. A successful exploratory experimental work was carried out for a recovery of Calcium Silicate from effluent (Ammonia distillery waste from Soda Ash Plant) supplied by the Dhrangadhra Chemical Works, Dhrangadhra.
6. A successful sponsored work was carried out to prepare calcium carbonate and Calcium Silicate from waste cipi-shells-buffer solution supplied by the Industries, Dept. of Govt. of Bihar through Polytechnology Transfer Centre, Patna.
7. A successful Consultancy work on abatement of acidic effluent pollution and simultaneously using this effluent a process is developed for the preparation of precipitated Silica for M/s. Om Neelkanth Chemicals Pvt. Ltd. Ahmedabad.
8. A successful Consultancy work on desired specifications of precipitated silica is carried out, which was offered by M/s Bethal Chemicals Pvt. Ltd. Cochin.
9. Consultancy services offered to M/s JLB Industries Aburoad for the layout and erection of precipitated Silica Plant.
10. Sponsored project on development of Zeolite – A (detergent grade) using Alumina refinery liquor – offered by National Aluminium Company (NALCO), Bhubenshwar.

### *Deputations Abroad*

From 1<sup>st</sup> May 1979 to 15<sup>th</sup> July 1980, I was deputed to West Germany to attend the 15<sup>th</sup> International Seminar in Chemical Engineering and Physical Chemistry at the University of Karlsruhe, West Germany.

### *A Brief account of 15<sup>Th</sup> International Seminar is given below*

- I. From 1st May 1979 to 25<sup>Th</sup> August. 1979 (i.e. for 4 months) I have done German language course at International stadium Zentrum, Heidelberg.
- II. In September/ October 1979 attended two short courses in Nuclear Chemistry and Technical Courses in Chemical Engineering at Nuclear Research Centre. Karlsruhe and Dechema Institute, Frankfurt, respectively.
- III. From the end of October 1979 till 15<sup>Th</sup> July 1980 research carried out at the Institute for Mechanical Processes in Chemicals Engineering of the University of Karlsruhe.

### *Significant Achievement while working in CSMCRI*

1. In the capacity of project leader - project on Zeolito-A (detergent grade) from Alumina refinery liquor, offered by NALCO - Bhubenshwar is completed successfully and the technology for 10000 MT / annum capacity plant has been transferred through NRDC to NALCO - for biggest ever fees received by CSMCRI / CSIR - fetching 1.35 crores for premium & lumpsum royalty. Also received four awards by our team for above project work.
2. Marquis' Directory WHO'S WHO in SCIENCE & TECHNOLOGY, USA have recognized my work and published my brief biography in their edition - published from the year 2002 to till this year.

## **DETAILS OF WORK EXPERIENCE IN INDUSTRY**

<b>Name of the Company</b>	<b>MADHU SILICA PVT. LTD, BHAVNAGAR</b>
<b>Total Years of Work Experience</b>	9 Years & 6 Months
<b>Position Held</b>	From Feb. 1996 to July 2005, I have worked as a full time R & D consultant to M/s Madhu Silica Pvt. Ltd., Bhavnagar.
<b>Nature of work carried out</b>	<ol style="list-style-type: none"><li>I. Set up of their new R &amp; D Centre as well as carried out Research &amp; Developmental work on import substitute grades of Silicas and other Inorganic speciality chemicals.</li><li>II. Design, erected and successfully commissioned 1500MT/Annum ABRASIVE SILICA PLANT</li><li>III. Translated all technologies developed from pilot scale to commercial scale.</li><li>IV. Design, erected and successfully commercialized GRANULATED SILICA PLANT.</li></ol>

**Processes / Products  
Developed at Madhu Silica Pvt.  
Ltd.**

- I. Abrasive Silica for Gel Dental Toothpaste formulation
- II. Treated Silica for cosmetic & tonner ink
- III. Coated Silica for printing ink
- IV. Coated Silica for Laquer / Paint
- V. Precipitated Silica for plastic films (antiblocking agent)
- VI. Colourless / Coloured Silica agglomerates for gel toothpaste formulation
- VII. Coloured Calcium Carbonate agglomerates
- VIII. Low surface Area Silica for silicone rubber
- IX. High surface Area Silica for Silicone rubber
- X. Cheaper route for rubber grade precipitated Silica
- XI. Highly Dispersible Silica for passenger car tyre treads (GREEN TIRE-CONCEPT)
- XII. Highly Abrasive Silica for toothpaste and other applications
- XIII. Thickening Silica (High Viscosity)
- XIV. Sensory granules for different applications including opaque/gel toothpaste
- XV. High surface area- High DBP Absorption silica for weedicide & pesticides
- XVI. Silica having > 400% water absorption capacity for processing aid
- XVII. Silica for plastic master batches

**Publication while Working with  
MSPL**

1. "Precipitated Silica (Abrasive) - A PRODUCT PROFILE" Chemical Weekly, P 161, Jan - 18, 2000
2. "Highly Dispersible Precipitated Silica" Rubber India, P-37, January, 2003

**Significant Achievement**

1. A new R & D centre having 6000-sq.ft. Floor area planned & set up in 11 month's time.
2. Got DSIR - NewDelhi recognition within 1 year of functioning of new R & D Centre.



3. Technology of Abrasive Silica developed - is successfully transferred to M/s. Aquagel Chemicals Ltd.- Navagam – Bhavnagar- which has fetched Rs. 25 Lacs towards premium and will fetch 75 Lacs towards royalty in coming 6 years time. A 1500 MT / Annum capacity plant, based on developed technology is already commissioned successfully in Dec,2000.
4. All the products developed are of international standards and are commercialised by MSPL in their expansion programme.
5. Recd. NRDC - PRIZE AWARD in the year 2005 for abrasive silica technology.

***Name of the Company***

***M/s GUJARAT MULTI GAS BASE CHEMICALS PVT. LTD, MEHSANA***

**Position Held**

From 1STAUG. 2005 to 31stjuly 2006, I was working as Vice President- Technical with M/s Gujarat Multi Gas Base Chemicals Pvt Ltd, Mehsana, Gujarat, India –who are One of the leading manufacturers of Molecular Sieves, Zeolites, Precipitated silicas, clays and other speciality mineral based chemicals.

**Nature of work carried out**

Following tasks are carried out in 12 months of my working with above company.

1. Technology of 5 grades of precipitated silica is transferred on commercial scale production level successfully
2. Design R & D CENTRE to carry out R & D work on speciality inorganic chemicals and minerals.
3. Prepared a new brochure on precipitated silica and help in development of company's website for getting wider market of their products
4. Incorporated few technical changes in 4000 MT/Annum newly set up plant which has been commissioned successfully in the month of Dec.2005.
5. Set up toothpaste application as well as microbial analysis laboratory
6. Efforts made for effective marketing of silicas manufactured by the company - thro' I – net.
7. Basic design calculations are made for proposed expansion plant of dental grade silicas.

*Name of the Company*

*SPECIALITY SILICA PVT. LTD, NEW DELHI*

From Jan.2007 to Nov.2010, worked as full time consultant to this company for setting up of their 100 TPD PRECIPITATED SILICA PLANT in phase wise - with starting capacity of 15 TPD. Successfully completed the erection by Aug.2008. The commercial production has been started from Aug.2008 and quality of the FOUR RUBBER GRADES PRECIPITATED SILICA has been established successfully. Plant is working at 100 % rated capacity having quality at par with international standard.

*Name of the Company*

*M/s AMS Fine chemicals , Bhavnagar*

From oct, 2008 started working on a turnkey project on 10 MT/Day LIGHT BASIC MAGNESIUM CARBONATE by soda ash process for this local Bhavnagar party. This project is successfully completed in July 2010.

## **RECENT ASSIGNMENT AND DEVELOPMENT**

Following Technologies are developed during the year 2011 to 2013.

1. Light Basic Magnesium Carbonate from Calcined Magnesite.
2. Soap Grade Sodium Silicate from Rice Husk Ash
3. Rubber Grade Precipitated Silica from Rice Husk Ash.