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Education :

Degree/Course	Institute/University	Year of passing
B Tech - Chemical Engg	IIT Bombay	1970
M Chem Engg - Chemical Engg	UDCT Bombay University	1990

Fellowship :

- FNAE – Elected as a fellow of the Indian National Academy of Engineering (INAE) in 2006

Current Position / Positions Held :

- Chairman, Expert Committee on Foods Processing appointed jointly by the Ministry of Foods Processing Industries, and Sc & Eng Research Board – DST, GOI from 2012 till date (reappointment done in 2015).
- Professor (Adjunct), Department of Chemical Engineering, IIT Bombay: from 2008 till date
- Vice President Corporate Research, Unilever Research India: from 2001 to 2007
- Member - Corporate Research Leadership Team (CRLT), Unilever Corporate Centre Colworth, UK: from 2001 to 2007
- Dy. Head of Laboratory, Hindustan Lever Research Centre, Bangalore, India : from 1997 to 2007
- Member of Expert Committee of FIST – SERB - DST Govt. of India : from 2009
- Member of PAC for Chemical Engineering : SERB - DST Govt. of India : from 2001 to 2011
- Member of Research Council of Central Food Technological Research Institute (CFTRI), Mysore – CSIR, Govt. of India : from 2007 to 2013
- Expert Member of Research Council of Central Salt & Marine Chemicals Research Institute (CSMCRI), Bhavnagar - CSIR, Govt. of India : from 2004 to 2006
- Expert Member of Group appointed by the Principal Scientific Advisor to GOI, on Rural Centric Food Processing … 2014
- Chairman of CSIR Committee for preparation of X^{th} 5 Year Plan for R&D in Foods Processing

Work Experience :

- Teaching and supervising research towards Dual Degree/M.Tech/PhD, at the Department of Chem. Eng., IIT Bombay

- 37 years of R & D experience in in a Multinational Company, in various roles including head of a laboratory comprising more than 40 PhDs, as a practicing scientist/technologist, trainer of advanced scientific talent, and strategic leader of R&D; in the areas of Industrial/Speciality/Oleo chemicals, Beverages/Foods, and Home/Personal Care Products; leading to number of inventions, innovations and technology transfers to the business, resulting in more than 25 inventions patented in more than 30 different countries; total no of patents granted more than 200

.

- Played a lead role in establishing basic research programmes in Chemical Engineering, Materials Science, Interfacial Engineering, Electrodynamics, and Neurobiology in the Unilever Research Laboratories in India, simultaneously promoting very productive collaborations with Academic Institutions and CSIR Laboratories such as IIT Bombay, IIT Kanpur, IISc Bangalore, TIFR Mumbai, NCL Pune etc.

- Served on several Expert Committees set up by the Department of Science and Technology (DST), Government of India, Scientific Advisory Committee of the (Union) Cabinet (SAC-C), Council for Scientific and Industrial Research (CSIR) etc, in various capacities as Chairperson or member. The responsibilities involved reviewing and recommending infrastructural support to scientific institutions/Universities, reviewing and mentoring R&D Projects from such institutions, preparing 5 Year R&D Plans etc., in the areas of Chemical Engineering or Foods

Current Research Interests:

- Soft material systems
- Electro-dynamic/Dielectrophoretic/Electro-chemical phenomena
- Nano materials/Janus particles
- Biology inspired superhydrophobicity and structured colour/optical phenomena
- High carbon efficiency transformation of biomass in to renewable energy sources
- Development of products and processes involving foods/surfactants/polymeric systems and electrodynamic phenomena.

Partial List of Technologies Developed:

- Electrodynamics and electrochemistry based devices for fabric cleaning
- Industrial scale chromatographic purification of Sal fat (Cocoa Butter Substitute) for exports
- Novel non-toxic, non-corrosive eutectics, and energy saving systems for distribution of ice creams ***(Received the first International Unilever Research Team Award for the invention, in 1998)***
- Intermeshed co-rotating as well as counter-rotating extruders for processing of soaps and detergents
- Micro and macro porous silica xerogels for dental applications
- Adsorbent silica-aluminas for chromatographic purification of oils and fats
- Novel formulations for improved NSD *(Non-soapy Detergent)* Bars
- Novel structuring systems and formulation rules for high performance and environmentally friendly soap bars
- Improved processes for manufacture of tea and aroma capture ***(Received Unilever's Best Patent Applications Award in Foods for the invention, in 2006)***
- Non-mercury, water-based clinical thermometer

Patents/Publications/Invited Talks:

- Over 150 Classified Unilever R&D Research Reports on varied subjects covering development of a number of product/process/equipment technologies

- Over 25 inventions patented in more than 30 different countries; total no of patents granted more than 200
- Several publications, in high impact peer reviewed journals, such as Langmuir, JCP, Macromolecule, AIChEJ etc
  (Article featured on the front cover of Langmuir in 2005 : highlighted in Nature, and Science News – US. Another paper featured on cover page of Soft Matter in 2012)
- Co-Editor of two books (Indo-UK Forum Proceedings) on Materials Science and Engineering, Published jointly by The Royal Society and Imperial College Press, UK
- Several invited talks on diverse subjects such as Nano science&technology, Materials Science of consumer products, Interfacial Engineering, the Future of Chemical Engineering, Creativity, Talent Management in R&D, Leadership of Industrial R&D etc, in National and International fora

Partial List of Positions in Expert Committees:

- Reviewer of scientific journals such as Chemical Engineering Science, Langmuir, Chemical Physics Letters
- Examiner of PhD in Chemical Eng /Chemical Technology : IIT Bombay, UICT Bombay University
- Chairperson of Sub-Committee for Foods Processing : 10th Five Year Plan of CSIR Laboratories
- Member of the National Scientific Advisory Committee set up in January 2008, by the Ministry of Food Processing, Govt. of India
- Member of Expert Committee of IRPHA – SERC – DST – Govt. of India
- Member of Selection Committees for Scientists NCL – CSIR – Govt. of India

Membership of Professional Bodies :

- Fellow – Indian National Academy of Engineering
- Life member – Materials Research Society of India
- Life member – Indian Society for Surface Science and Technology
- Life member – Indian Science Congress Association

Other Interests/Activities:

- Conceptual Structure, and Epistemology of Science & Technology
- History of Science & Technology; Social and Economic History of India
- Creative Photography
- Indian Classical Music
- President and Vice President of Two Educational Trusts in Mumbai Operating Government Aided Primary and Secondary Schools

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Annexure I.1*(Page 4)*: Publications in Public Domain

Edited Books/Monographs
Invited Articles
Papers in Peer-reviewed Journals, Books

Annexure I.2 *(Page 6)*: Partial List of Invited Talks

Annexure I.3 *(Page 7)*: Patents Arising out of the Classified Work, and Granted in India and Abroad

Total No of Patent Grant Records Found : 207 (60 during last 5 years); Status: December2009

Annexure I.4 *(Page 9)*: **Classified Reports**

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Annexure I

I.1 Publications in Public Domain

Edited Books/Monographs

Editor(s): Lal, M; Mashelkar, RA; Kulkarni, BD; Naik, VM
Title: Structure and Dynamics of Materials in the Mesoscopic Domain
Publisher: Imperial College Press, London and The Royal Society, London; 1999

Editor(s): Lal, M; Lillford, PJ; Naik, VM; Prakash V
Title: Supramolecular and Colloidal Structures in Biomaterials and Biosubstrates
Publisher: Imperial College Press, London and The Royal Society, London; 2000

Editor(s): Naik, VM
Title: New Directions in Materials Science
Publisher: Hindustan Lever Research Centre, Bombay; 1990

Invited Articles

Author(s): Naik, VM; Mukherjee, R; Majumdar, A; Sharma, A
Title: Super Functional Materials: Creation and Control of Wettability, Adhesion, and Optical Effects by Meso-structuring of Surfaces
Book: CURRENT TRENDS IN SCIENCE; edited by N Mukunda; Indian Academy of Sciences, Bangalore; 2009

Author(s): Naik, VM
Title: Nano Phenomena at Work, for Colour Management in Personal Care
Book: BIONANOTECHNOLOGY; edited by Reisner; CRC Press, NY; 2008

Author(s): Zhu, S; Chambers, JG; Naik, VM
Title: Soap
Book: KIRK-OTHMER CONCISE ENCYCLOPEDIA OF CHEMICAL TECHNOLOGY, 5th Edition, Volume 2; John Wiley & Sons, NY; 2007

Papers in Peer- reviewed Journals, Books

Author(s): Patil, RS; Juvekar, VA; Naik, VM
Title: A polarity switching technique for the efficient production of sodium hypochlorite from aqueous sodium chloride using platinum electrodes
Source: Industrial & Engineering Chemistry Research, 53(23): 19426-19437, 2014

Author(s): Soni, P, Juvekar, VA, Naik, VM
Title: Investigation on dynamics of double emulsion droplet in a uniform electric field
Source: *Journal of Electrostatics*, 71: 417-724, 2013

Author(s): Raut, JS; Duggal, C; Venkataraghavan, R; Ghoshdastidar, S; Franklin, DC; Roy, A; Naik, VM
Title: Electric field induced cloudy-clear transitions in micellar solutions of a block copolymeric amphiphile
Source: Industrial & Royal Society of Chemistry Advances, 3: 12341-12348 MAY 2013

Author(s): Raut, JS; Stoyanov,SD; Duggal, C; Pelan, EG; Arnoudov, LN; Naik, VM
Title: Hydrodynamic cavitation: a bottom-up approach to liquid aeration
Source: Soft Matter, 8(17): 4537- 4834 MAY 2012 ***(Paper featured on cover page)***

Author(s): Patil, RS; Juvekar, VA; Naik, VM
Title: Oxidation of Chloride Ion on Platinum Electrode: Dynamics of Electrode Passivation and its Effect on Oxidation Kinetics

Source: Industrial & Engineering Chemistry Research, 50(23): 12946-12957 DEC 2011

Author(s): Raut, JS; Akella, S.; Singh, A; Naik, VM
Title: Catastrophic drop breakup in electric field
Source: Langmuir, 25(9): 4829-4834 SEPT 2009

Author(s): Lian, G.; Naik, VM; Li, J.
Title: Preface to the Complex Materials special issue
Source: Industrial & Engineering Chemistry Research, 47(17): 6345-6346 SEPT 2008

Author(s): Raut, JS; Singh, A; Juvekar, VA; Naik, VM
Title: Soap: The polymorphic genie of hierarchically structured soft condensed matter products
Source: Industrial & Engineering Chemistry Research, 47(17): 6347-6353 SEPT 2008

Author(s): Raut, JS; Bhattad, P; Kulkarni, AC; Naik, VM
Title: "Micro-pottery"-Marangoni effect driven assembly of amphiphilic fibers
Source: LANGMUIR, 21 (2): 516-519 JAN 18 2005 ***(Paper featured on the front cover of Langmuir ; and highlighted in Nature, as well as Science News – US, in 2005)***

Author(s): Raut, JS; Naik, VM; Jongen, TR
Title: Efficient simulation of time-dependent flows: Application to a twin screw extruder
Source: AICHE JOURNAL, 49 (8): 1933-1946 AUG 2003

Author(s): Suresh, SJ; Naik, VM
Title: Theory of dielectric constant of aqueous solutions
Source: JOURNAL OF CHEMICAL PHYSICS, 116 (10): 4212-4220 MAR 8 2002

Author(s): Suresh, SJ; Naik, VM
Title: Hydrogen bond thermodynamic properties of water from dielectric constant data
Source: JOURNAL OF CHEMICAL PHYSICS, 113 (21): 9727-9732 DEC 1 2000

Author(s): Basappa, G; Suneel; Kumaran, V; Nott, PR; Ramaswamy, S; Naik, VM; Rout, D
Title: Structure and rheology of the defect-gel states of pure and particle-dispersed lyotropic lamellar phases
Source: EUROPEAN PHYSICAL JOURNAL B, 12 (2): 269-276 NOV 1999

Author(s): Suresh, SJ; Naik, VM
Title: A multilayer theory for interfacial properties of systems containing hydrogen bonding molecules. II. A simple, yet exact form for segment potentials arising from association interactions
Source: JOURNAL OF CHEMICAL PHYSICS, 111 (22): 10389-10390 DEC 8 1999

Author(s): Juvekar, VA; Anoop, CV; Pattanayek, SK; Naik, VM
Title: A continuum model for polymer adsorption at the solid-liquid interface
Source: MACROMOLECULES, 32 (3): 863-873 FEB 9 1999

Author(s): Suresh, SJ; Naik, VM
Title: A multilayer theory for interfacial properties of systems containing hydrogen bonding molecules
Source: JOURNAL OF CHEMICAL PHYSICS, 109 (14): 6021-6042 OCT 8 1998

Author(s): Reddy, GP; Chokappa, DK; Naik, VM; Khakhar, DV
Title: Structure formation in suspensions with a liquid crystalline medium: Percolation phenomena
Source: LANGMUIR, 14 (9): 2541-2547 APR 28 1998

Author(s): Suresh, SJ; Naik, VM
Title: Bond-counting approach for representing association effects in the interfacial region of multicomponent systems
Source: LANGMUIR, 13 (18): 4785-4787 SEP 3 1997

Author(s): Suresh, SJ; Naik, VM
Title: Predictive models for interfacial properties of associating systems. A statistical thermodynamic approach

Source: LANGMUIR, 12 (25): 6151-6163 DEC 11 1996

Author(s): Shouche, SV; Chokappa, DK; Naik, VM; Khakhar, DV
Title: Effect of particulate solids on the rheology of a lyotropic gel medium
Source: JOURNAL OF RHEOLOGY, 38 (6): 1871-1884 NOV-DEC 1994

Author(s): Naik, VM
Title: Modeling and simulation of Di Ammonium Phosphate (DAP) plant
Source: FERTILISER NEWS, 36(5): 59-71 MAY 1991

Author(s): Pradhan, RM; Naik, VM; Ganguli, P
Title: Polymer effects on flocculation of sodium fluorosilicate during crystal-growth in phosphate medium
Source: INDIAN JOURNAL OF TECHNOLOGY, 27 (5): 244-247 MAY 1989

Author(s): Bhujle, VV; Dhalewadikar; SV; Naik, VM
Title: Mathematical modeling of soap drying process
Book: RECENT ADVANCES IN CHEMICAL ENGINEERING, Edited by Saraf, DN; Kunzru, D; Tata McGraw-Hill Publishing Co Ltd, New Delhi; 1989

Author(s): Mistry, ND; Naik, VM; Gandhi, AN
Title: Fluid bed granulation: Application of population balance models
Book: RESEARCH IN INDUSTRY, Edited by Mulky, MJ; Srivastava, HC; Vatsya, B; Oxford & IBH Publishing Co Pvt Ltd, New Delhi; 1987

I.2 Partial List of Invited Talks / Seminars

Topic : Whither Chemical Engineering
Forum : 16th Prof M G Subba Rau Lecture – NIT Karnataka, Surathkal, India, 21st April 2015

Topic : Soft Matter in FMCG Products
Forum : Mumbai Pune Softmatter Meetings Forum – IIT Bombay, Mumbai, India, 10th Jan 2015

Topic : The Fascinating Materials Science of Structured Consumer Products: Illustrative Case Studies
Forum : 5th National Symposium for Materials Research Scholars – IIT Bombay, Mumbai, India, 8th - 10th May 2013

Topic : Whither R&D in Processed Foods – an Industrial perspective
Forum : 25th Meeting of the Scientific Advisory Committee to Cabinet (SAC-C, Government of India), 7th February 2013

Topic : Recent Trends in Academic Research and Their Relevance to Indian Industry – Panel discussion
Forum : Research Scholars symposium, Chemical Engineering Association – IIT Bombay, Mumbai, India, 17th March 2012

Topic : Harnessing Interfacial Phenomena for Structuring and Functionalizing Foods
Forum : International Conference on Functional Dairy Foods organized by National Dairy Research Institute – Karnal and Dairy Technology Society of India, 16-19th November 2011

Topic : Historical Evolution of Electrochemistry
Forum : SERC School of Electrochemical Systems, IIT Bombay, Mumbai, 16 – 28th May 2011

Topic : Electrodynamic Manipulation of Electro-neutral Materials
Forum : Complex Fluids & Polymer Eng Seminar Series, National Chemical Laboratory, Pune, 21st July 2011

Topic : Uncorking of a Polymorphic Genie: The Story of Soap
Forum : CTARA Seminar Series, IIT Bombay, Mumbai, 3rd February 2010

Topic : Hypothetico-Deductive Development of Processes in Industry : Synthesis Scale-up and Debugging of a Process for DAP Fertilizer
Forum : Advances in Chemical Engineering & Process Technology (ACEPT 09), NCL Diamond Jubilee Symposium, Pune, 4-6th June, 2009

Topic : Creativity in Research
Forum : "Nirman – Workshop", Pune 22nd February 2009

Topic : Dr KKG Menon – The Scientist
Forum : Sixth KKG Menon Memorial Lecture by Dr Pushpito Ghosh of CSMCRI,Bhavnagar, organized by UICT, Mumbai and Association of Food Scientists and Technologists (I), Mumbai, 19th September 2008

Topic : Multi-scale Material Manipulation through Dielectrophoretic Forces: an Illustrative Review
Forum : 2nd International Conference on Multi-scale Structures and Dynamic Complex Systems: *Processes and Forces for Creation of Designer Materials with Multi-scale Structures*, organized by Unilever, Indian National Science Academy, Institution of Chemical Engineers - UK, The Royal Academy of Engineering - UK, and The Chinese Academy of Sciences, Bangalore, 4-5th September 2008

Topic : Patterns of Creativity in Development of Science and Technology
Forum : Keynote Address – Annual Research Symposium, Department of Chemical Engineering, Indian Institute of Technology Kanpur, 5th July 2008

Topic : Patterns of Creativity in Industrial Research
Forum : Plenary Talk - Corporate Research Review of Unilever, Alton Towers, Staffordshire, UK, 2nd May 2007

Topic : Nurturing Creativity in R&D
Forum : John F Welch Technology Centre, GE, Bangalore, 16th November 2006

Topic : Nurturing Creativity in R&D
Forum : International Conference on "World Class Laboratory Leadership", Infor-Media India (Member of Expomedia Group PLC),Mumbai, 22nd June 2006

Topic : Emergence and Role of Nano-Phenomena in Fast Moving Consumer Goods
Forum : International Seminar "Nanotechnology – Perspectives and Prospects", Tata Institute of Fundamental Research, Mumbai, 25th May 2006

Topic : Functional Nano-Structures and Materials in the world of Fast Moving Consumer Goods
Forum : "World Nano-Economic Congress", Mumbai, 28th March 2006

Topic : The Fascinating World of Interfacial and Colloid Science
Forum : SERC School on "Colloids and Interfaces : Fundamentals and Research Challenges", IIT Bombay, Mumbai, 6th March 2006

Topic : Evolutionary Destiny of Chemical Engineering Science
Forum : National Symposium on "Chemical Engineering – The Journey Ahead", Indian Institute of Science, Bangalore, 20th June 2005

Topic : Fluid-Fluid Interface Driven Mobilization and Self-Assembly of Particles at Interfaces
Forum : "Chemical Engineering in a Global Environment" Joint Conference of IIChE & AIChE, Mumbai, 28-30 December 2004

Topic : Talent Management in R&D
Forum : "Forum for R&D Leaders : Critical Success Factors for Managing R&D", a MarcusEvans Conference, Bangalore, 23rd September 2004

Topic : Frontiers of Technology in Processing of Foods
Forum : Association of Food Technologists (India), Bangalore, 14th September 2002

Topic : Transcending Professional Skills for Creative R&D in Foods
Forum : Central Food Technological Research Institute, Mysore, 28th may 2002

Topic : Soft Condensed Matter, and the Fast Moving Consumer Goods Industry
Forum : "Discussion Meeting on Soft Condensed Matter Physics", L.A.Meera Memorial Trust, Dhvanyaloka, Mysore, 31st January 2000

Topic : Chemical Engineering in Fast Moving Consumer Goods Industry
Forum : Golden Jubilee Lecture, Chemical Eng Dept, Indian Institute of Science, Bangalore, June 1998

Topic : Applied Mathematics in Fast Moving Consumer Goods Industry
Forum : Workshop on "Mathematics in Industry" organized by Indian Institute of Science and J.N.Centre for Advanced Scientific Research, Bangalore, 6th January 1998

I.3 Patents Granted in India and Abroad (Arising out of the Classified Work)

{Total No of Patent Grant Records Found : 207 (60 during last 5 years); Status: December2009}

INDIA (Nos: 35)

INI50018, IN150029 (Divisional), IN156361, IN158153, IN166899, IN171129, IN171888, IN171899, IN176381, IN175392, IN175907, IN176107, IN177908, IN185635, IN188300, IN188397, IN188731, IN189614, IN189804, IN189875, IN190299, IN1904566, IN196058, IN196566, IN197734, IN197841, IN200866, IN204207, IN204581, IN205271, IN207158, IN208894, IN219602, IN222788, IN225152,

ARGENTINA (Nos: 5)
AR224763, AR009659, AR012704, AR026216, AR030881

ARIPO (Nos : 1)

AP1716

AUSTRALIA (Nos: 7)

AU732262, AU742532, AU726769, AU742860, AU752195, AU2001291892, AU2002219186

AUSTRIA (No: 1)

AT1220800

BELGIUM (Nos: 4)

BE0985022, BE0983337, BE9900408, BE1220800

BRAZIL (Nos: 4)

BR8002198, BR9307677-0, BR9506769-8, BR9304779.1

CANADA (Nos: 2)

CA2169944, CA2289762

CHILE (Nos : 1)

CL44029

CHINA (Nos: 8)

CN00814788.4, CN01820447.3, CN02807795.4, CN02807985.X, CN02818280.4, CN95191627.0, CN92204775.6, CN98806953.9,

COLOMBIA (Nos: 1)

CO28955

EURASIA (No: 1)

EA001627

EUROPE (Nos: 12)

EP0675948, EP0745120, EP0599467, EP0960322, EP0983336, EP0985022, EP0983337, EP1220800, EP1325104, EP1346022, EP1377658, EP1658363,

FRANCE (Nos: 12)

FR0675948, FR0745120, FR0599467, FR0960322, FR0983336, FR0985022, FR0983337, FR1220800, FR1325104, FR1346022, FR1377658, FR1658363

GERMANY (Nos: 12)

DE69303495, DE69524066.8, DE69325630.3, DE69727499.3, DE69808284.2, DE69823027.2, DE69809226.0, DE60012955.1, DE6004010277.6, DE60107290.1, DE60125206.3, DE60212107.8

GHANA (Nos : 1)

GH/AP1716

GREAT BRITIAN (No: 13)

GB2048931, GB0675948, GB3745120, GB0599467, GB0960322, GB0983336, GB0985022, GB0983337 GB1220800, GB1325104, GB1346022, GB1377658, GB1658363

INDONESIA (Nos: 6)

ID0009187, ID0010299, ID0010748, ID0014928, ID0016842, ID0017779, ID0020250, ID0020906

ITALY (Nos: 13)

IT0675948, IT0745120, IT0599467, IT0960322, IT09683336, IT0985022, IT0983337, IT1312875, IT1346022, IT1220800, IT1325104, IT1377658, IT1658363

JAPAN (Nos : 2)

JP3623796, JP4350949

KENYA (Nos : 1)

KE/AP1716

KOREA (Nos: 2)

KR353785, KR355171

MALAYSIA (Nos: 3)

MY112436, MY115749, MY125934

MEXICO (Nos: 4)

MX207762, MX217545, MX230709, MX249736

NETHERLANDS (No: 1)

NL1012288

NIGERIA (No: 1)

NG4458

PAKISTAN (Nos: 5)

PK136230, PK136277, PK136278, PK137504, PK138063

PHILIPPINES (No: 3)

PH16957, PH1-2000-02824, PH1-2003-500225

PORTUGAL (No: 1)

PT1220800

RUSSIA (Nos: 3)

RU2220192, RU001627, RU2278896

SINGAPORE (Nos : 1)

SG99515

SOUTH AFRICA (Nos: 12)

ZA95/0970, ZA96/10059, ZA97/10920, ZA98/3528, ZA98/4688, ZA98/4032, ZA98/4031, ZA2002/2898, ZA2002/2814, ZA2003/2694, ZA2003/4902, ZA2003/6781

SPAIN (Nos: 11)

ES0675948, ES0599467, ES0960322, ES0983336, ES0985022, ES0983337, ES0745120, ES1220800, ES1346022, ES1377658, ES1658363

SRILANKA (No: 1)

LK11941

SWEDEN (No: 1)

SE1220800

SWIZERLAND (No:1)

CH1220800

TAIWAN (Nos: 3)

TW93521, TW81638, TW92175

TANZANIA (No: 2)

TZ/P/08/00180, TZ/AP1716

TURKEY (No: 3)

TR1999/02187, TR2002/01016, 2003/01520

USA ((Nos: 7)

US5534212, US6554246, US6238612, US6224812, US6365567, US6770606, US7246942

I.4 Classified Research Reports

(Reproduced with gratitude from Unilever Research Database, under permission)

Title: Process induced structuring of detergent tablets – 3: melt-cast LC *(Liquid Crystal)* composites containing >40% water
Author: THOMAS S., NADAKATTI S.M., SENGUPTA A., NAIK V.M.
Reference: Research Report BL 99 0035; class 1; 1999

Title: Predictive model for interfacial properties of associating systems – 5: improving computational efficiency and obtaining reliable estimates for model parameters
Author: SURESH S.J., NAIK V.M.
Reference: Research Report BL 99 0023; class 1; 1999

Title: "Children friendly" eutectic cooled ice-cream pushcarts - part 2: use of eutectic coolants as heat shield
Author: RAMAKRISHNAN V., NAIK V.M.
Reference: Research Report BL 98 0036; class 2; 1998

Title: Rheology of anisotropic suspensions - part 1: identification of a phenomenological model
Author: RAUT J.S., NAIK V.M.
Reference: Research Report BL 98 0035; class 1; 1998

Title: Process induced structuring of personal wash bars (PWBs) -2: micromechanical structure of a model melt-cast composite system and guidelines for preparation of water rich melt cast PWBs
Author: NADAKATTI S.M., DEO S., NAIK V.M.
Reference: Research Report BL 98 0034; class 1; 1998

Title: "Children Friendly" eutectic cooled ice-cream pushcarts - part 1: computer simulation model for predicting performance of pushcarts
Author: RAMAKRISHNAN V., NAIK V.M.
Reference: Research Report BL 97 0026; class 1; 1997

Title: Low energy plodding *(extrusion)* – part10: extensive off line trials on prototype plant scale low energy plodder *(extruder)* in Bombay factory to improve extruded bar finish
Author: CHOKAPPA D.K., NAIK V.M.
Reference: Research Report IN 96 0172; class 1; 1996

Title: Studies in micro-emulsification for improved detergency - part 3: new concepts and molecules for oil solubilisation
Author: ROUT D.K., NAIK V.M.
Reference: Research Report IN 96 0170; class 1; 1996

Title: Low energy plodding *(extrusion)* - part 8: specifications, pre shipment tests and commissioning of low energy plodder *(extruder)* exported to the USA
Author: CHOKAPPA D.K., NADAKATTI S.M., HHAGWATI D., SOHONI N.B., NAIK V.M.
Reference: Research Report IN 96 0117; class1; 1996

Title: Low energy plodding *(extrusion)* - part 7: prediction of performance of LEP *(Low Energy Plodder)* and NIP *(Non Intermeshed Screw Plodder)* for processing of Olympus
Author: NADAKATTI S.M., CHOKAPPA D.K., NAIK V.M.
Reference: Research Report IN 96 0116; class1; 1996

Title: Low energy plodding *(extrusion)* – part 11: extensive on - line production trials on prototype plant scale l*ow* energy plodder *(extruder)* in Bombay factory.
Author: NADAKATTI S.M., CHOKAPPA D.K., NAIK V.M., SAXENA A., D'SOUZA D.
Reference: Research Report IN 96 0115; class1; 1996

Title: Process induced structuring of personal wash bars - part 1: injection moulding
Author: NADAKATTI S.M., NAIK V.M.
Reference: Research Report IN 96 0113; class 1; 1996

Title: Predictive model for interfacial properties of associating systems - part 2: a multi - layer treatment of homo - polymer solutions
Author: SURESH S.J., NAIK V.M.
Reference: Research Report IN 96 0111; class 1; 1996

Title: Improvements to clinical thermometer - part 4: construction of prototype mercury less thermometer
Author: SURESH S.J., NAIK V.M.
Reference: Research Report IN 96 0110; class 1; 1996

Title: Individual casting of Pears soap
Author: NADAKATTI S.M., NAIK V.M.

Reference: Research Report IN 96 0052; class 1; 1996

Title: Star-card : studies for improved odour stability.
Author: KULKARNI S.M., PACHA F.E., ARAVINDAKSHAN P., VATSA C., KUMAR V.G., NAIK V.M.
Reference: Research Report P IN 95 0151; class 2; 1995

Title: Low energy plodding *(extrusion)* – part 9: development and commissioning of prototype plant scale low energy plodder *(extruder)* in Bombay factory.
Author: CHOKAPPA D.K., NAIK V.M.
Reference: Research Report P IN 95 0142; class 1; 1995

Title: Statistical thermodynamics of associating systems - 1: prediction of solid-liquid and vapour-liquid interfacial properties.
Author: SURESH S.J., NAIK V.M.
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Author: APTE A.K., NAIK V.M., SEN B.P.
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Author: APTE A.K., NAIK V.M., SEN B.P.
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Reference: Research Report P IN 77 0073; class 1; 1977

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Author: NAIK V.M., APTE A.K., SEN B.P.
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Author: APTE A.K., NAIK V.M., SEN B.P.
Reference: Research Report P IN 77 0047; class 1; 1977

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Reference: Research Report P IN 77 0012; class 1; 1977

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Author: NAIK V.M., VAISHNAV V.B.
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Mesoscopic structures in liquids have an impact on the diffusion dynamics of the constituting molecules. Smectic 8CB liquid crystals on silicon wafers show the formation of mesoscopic structures on the Î¼m scale at a film thickness of 200 nm.Â Dynamics are described via single perylene diimide tracer molecule tracking of translational diffusion and in the case of FCDs by a combination of translation and rotation detected viafluorescence correlation spectroscopy. Tailoring perylene diimide molecules such that the optical transition dipole moment follows the liquid crystal director allows mapping out FCDs and investigating the dynamics within a single FCD. You have access to this article. Please wait while we load your content