Professor Dr. **V. G. Gaikar,** FNAE, FMASc**,** MIIChE, FMOTAI

Present position: Vice-Chancellor, Dr. Babasaheb Ambedkar Technological University, Maharashtra, (from March 2nd, 2016)
(on leave from the position of Bharat Petroleum Distinguished Professor of Chemical Engineering)
Institute of Chemical Technology (formerly UDCT)
Matunga, Mumbai-400 019
Email: (vgg.dbatu@gmail.com; vc@dbatu.ac.in)

Field of Specialization and Research:
Process Intensification using Microwave, Light and alternative energy sources, Thermochemical conversions of Biomass, Soft Condensed Matter, Reactive Separations and Design by Molecular Modelling, Clean Technology, Innovation Practices

Major Awards and Honours
Fellow, Indian National Academy of Engineers (2008),
Fellow, Maharashtra Academy of Sciences (2004),
Young Scientist Medal, Indian National Science Academy (1992)
Young Associate, Indian Academy of Sciences (1992-95)
IIChE-D.O.S.T. Dr. S.K. Sharma Medal and CHEMCON Distinguished Speaker Award (2013)
IIChE -Herdillia Award for Excellence in Basic Research in Chemical Engineering (2004),
Best Teacher Award, University of Mumbai (2002)
UGC Career Award (1994)

Number of Publications in Refereed International Journals: 164
Books: 02 ; Book Chapters: 03
Patents: Granted 08 (filed-14)
Number of Conference presentations and invited lectures: 230

Citation indices (Google Scholar)	All (1986 onwards)	Since 2011
Citations(Google Scholar/SCOPUS)	2527/1976	1154
h-index	27/23	19
i10-index	62	39

Academic Qualifications

Sr. No.	Degree	Subject	Class	Year	University	Additional particulars
1	B.Chem.Engg	Chemical Engineering	**Distinction** 71.8%	1982	University of Bombay	**5th Rank** in University
2	M.Chem.Engg	Chemical Engineering	**Distinction** 72%	1984	University of Bombay	**2nd Rank** in University
3	Ph.D.(Tech.)	Separations Through Reactions	By research	1986	University of Bombay	**Best Ph.D.(Tech.) Thesis** Award

Academic and Administrative Positions held earlier

Period	Place of employment	Designation
Feb 2015-to date	Institute of Chemical Technology	Bharat Petroleum Distinguished Professor of Chemical Engineering
July 2008-Feb 2016	Institute of Chemical Technology	Institute Coordinator, Technical Education Quality Improvement Program
August 2013-February 2016	Institute of Chemical Technology	Coordinator, DAE_ICT Centre for Chemical Engineering Education and Research
July 2009-August 2012	Institute of Chemical Technology	Head, Department of Chemical Engineering & Coordinator, UGC Networking Resource Centre
July 2002-Feb 2015	Institute of Chemical Technology	Bharat Petroleum Professor of Chemical Engineering
February 1992-July 2002	Department of Chemical Technology, University of Bombay	Reader in Chemical Engineering
August 1985 - February 1992	Department of Chemical Technology, University of Bombay,	Lecturer in Chemical Engineering
January 1989-December 1989	Department of Chemical Engineering, University of Edinburgh, Edinburgh	Visiting Lecturer in Chemical Engineering
July 1984-August 1985	Department of Chemical Technology, University of Bombay,	Associate Lecturer in Chemical Engineering

Membership of Professional Committees and Professional Positions held

Director, Aarti Drugs Ltd. (2006-2016)
Director, Bharat Oman Refineries Ltd.(2014- 2016)
Fellow, Indian National Academy of Engineering(INAE), New Delhi
Fellow, Maharashtra Academy of Sciences
Member, Sectional Committee (Chem Engg), INAE, New Delhi
Member, TASK Force, Bioenergy Sciences, Department of Biotechnology, Ministry of Science and Technology, GoI.(2014-)
Member, National Program on Carbon Capture, Department of Science and Technology, GoI(2015-)
Member (co-opted), PAC-SERB, Department of Science and Technology(2016-)
Member, TASK Force, Empowerment and Equity Opportunity for Excellence in Science, SERB, Ministry of Science and Technology, GoI.(2013-14)
Member, Empowered Board, RDCIS- SAIL Project for Waste Water management in Steel Industry (2011-2016)
Member, Working group-Innovation Council, Maharashtra State(2016-)
Coordinator, ICT-DAE Centre for Chemical Engineering Education and Research, (DAE, GoI)(2013-16)
Institute Coordinator, Technical Education Improvement Quality Program (MHRD, GoI), ICT (2010-2016)
Coordinator, TEQIP Innovation Networking Centre, Maharashtra State (2014-2016)
Member, Selection Committee for appointment of Director at Shivaji University (2016)
Lead Member, Expert Committee for Research and Innovation, State Project Directorate, RUSA(GoI)(2016)
Life Member, Indian Institute of Chemical Engineers
Life Member, Indian Society for Surface Science and Technology
Fellow Member, Oil Technologists Association of India
Life Member, Asian and Mid-east Institute of Chemists
Member, Task Force(MoU), Department of Public Enterprise(2012-13), GOI
Coordinator, UGC Networking Resource Centre in Chemical Engineering, ICT (2009-2014)
Member, R&D Monitoring Committee for ONGC Institutes (2012-13)
Member, Advisory Committee, UGC-DRS program in Chemical Engineering, BITS, Pilani(2012-2014)
Member, Advisory Committee, UGC-CAS program in Chemical Engineering, BHU (2012-2014)
Chairman, Department Advisory Committee (DAC), Department of Chemical Engineering at MIT Academy of Engineering, Alandi, Pune (2014-2016)
Member, Vishwakarma Puraskar Committee, Labour Ministry, GOI(2009-12)
Member, Selection Committee for Appointment of Scientists, NCL, Pune(2011)
Member, Selection Committees for Appointment of Faculty, BITS-Pilani, Gharda Institute of Technology, Calcutta University(2009-12)

Past Major responsibilities (in ICT, Mumbai)

Coordinator, ICT-DAE Centre for Chemical Engineering Education and Research (2013-2016)
Institute Coordinator, Technical Education Quality Improvement Program (MHRD, GoI),(2007-16)
Member, Planning and Monitoring Board, ICT (2012-2016)
Member & Coordinator, IQAC, Institute of Chemical Technology (2015-16)
HoD, Department of Chemical Engineering, ICT(2009-2012)
Vice-President, Technological Association (2002-2006)
Honorary Secretary, UDCT Alumni Association(2004-2009)
Member, DAE-ICT Knowledge Based Engineering Centre, ICT (2002-2008)

Earlier Industrial Consultancy

Fossil Liquid and Minerals Energy Ltd(2014-15).(Design of Bitumen Oxidation Plant),
Hindustan Unilever Ltd.(Tea Solubilization)(2015-16)
Libox Goad Pvt Ltd(2013-14)(Process improvement for KMnO4 plant).,
Alcon Electronics Ltd.(2013-14)(Design of Electrolyte Plant)
Beech Projects Ltd. (2011-12)(Industrial area soil evaluation and remediation);
IPCA Laboratories Ltd(2011-12)(Process Improvement),
Synthite Ltd(2012)(curcumin extraction),
Godavari Biorefineries Ltd(2003-2010)(Natural Products),
Lele and Associate Engrs, (2008-2009)(Biodiesel Plant),
Reliance Industries Ltd., (Design and simulation of heterogeneous azeotropic distillation column),
Vandana Chemo-pharma Ltd.(Recovery of NOx as acid),
Deepak Nitrite Ltd.,(Design and simulation of nitrochlorobenzene separation column)
Excel Industries Ltd.(process development),
Sunshield Chemicals Ltd.(Design of biodiesel plant),
Morya Global Ltd. (Process development),
Laxmi Organics Ltd. (Process Development),
Intec Polymers(revamping of distillation column),
Godrej Industries Ltd (Separation of Oleic and linoleic acids),
Polyolefins Industries Ltd.(Recovery of Chemicals);
Amar Dye Chem Ltd (Separation of nitroanililines)

Editor/Co-editorship of Professional Journals

Member, Editorial Board, Indian Journal of Chemical Technology, NISCAIR(2008-2015),
Journal of Biomedical Research, NMIMS, Mumbai(2013-2015)

List of Research Projects completed & ongoing

Completed Projects at ICT

	Title of Projects	Funding Agency	Amount (Lakhs)
1	Thermodynamic Studies in Tea Components solubilization	Hindustan Unilever Ltd (2014-15)	10
2	Solubilization of Ca-distearate	Hindustan Unilever Ltd (2014-15)	10
3	Investigations of Adsorption and Release of Triclosan in Presence of Sodium Lauryl Sulfate, Silica, Magnesium Aluminum Silicate (Smectite Clay) and Hydroxyapatite Surface in Liquid Medium	Hindustan Unilever Ltd (2014-15)	4.25
4	Crude upgradation by hydrodynamic cavitation	Bharat Petroleum Corporation Ltd(2013-14)	10
5	Heat Effects on mixing of hazardous chemicals	Petrofac Saudi Arabia Ltd	US $8000
6	Studies on steam pyrolysis of a CHON Amide as a waste solvent management method	IGCAR(2009-2012)	24.4
7	Studies in Runaway reactions	IGCAR(2009-12)	24.4
8	Design of solvent and extractant by molecular modeling for heavy metals	Department of Atomic Energy / Knowledge Based Engineering Centre (2009-12)	84.4
9	Experimental determination of H2-I2-HI-H2SO4 vapor-liquid equilibria	Department of Atomic Energy / Knowledge Based Engineering Centre	48
10	Advanced materials as CO2 removers: A computational study of CO2 sorption Thermodynamics and kinetics	Indo-European Joint Project-Department of Science and Technology (2009-12)	78
11	Separation of organic and inorganic mixtures by functionalized polymers	Department of Science and Technology (2009-12)	23
12	Simulation of Heavy water Chemical Exchange distillation column	Knowledge based Engineering-DAE (2002-2007)	85
13	Investigations of high pressure vapor-liquid equilibria	Heavy water Board (2003-2006)	50
14	Hydrotropy and Chemical Engineering applications	DST (Swarnajayanti Cell) (2001-2006)	72
15	Separation of oleic and linoleic acids by reactive methods	Godrej Industries Ltd (2003-2006)	5
16	New strategies for extraction of natural products	C.S.I.R (1997-2000)	2.5

17	Aqueous two phase extraction in presence of surface active substances	D.B.T.(1993-5)	13.50
18	Thermodynamic studies in presence of hydrotropes	I.N.S.A. (1992-5)	1.2
19	Zeolites in separations	D.S.T. (1991-94)	9.50
20	New Strategies of separations of close boiling compounds	C.S.I.R(1989-92)	2.12
21	Recovery of Chemicals from aqueous Streams	Polyolefins Industries ltd. (1989)	2.50
22	Design of solid supported ligands for metal ion extraction	DAE-ICT Centre in Chemical Engineering Education and research, Department of Atomic Energy(2011-16)	87
23	Design of New reactors for oleochemicals	DAE-ICT Centre in Chemical Engineering Education and research, Department of Atomic Energy(2011-16)	25
24	Innovation Networking of TEQIP Institutes in Maharashtra	TEQIP, MHRD (2014-16)	150

Current Projects(at ICT, Mumbai)

	Title of Projects	Funding Agency	Amount (in INR, Lakhs)
1	Thermodynamic studies of solubilization of Tea Components	Hindustan Unilever Ltd (2014-16)	40
2	Development of additives for improving liquid yield in delayed coker	Bharat Petroleum Corporation Ltd. (2015-17)	50
3	Regeneration of Ionic Liquids in desulfurization of hydroprocessing feedstocks	Bharat Petroleum Corporation Ltd.(2015-17)	50
4	Photocatalytic transformation of CO2 into liquid products using CdS supported on polymeric adsorbents and graphene	Department of Science and Technology (2014-17)	53

List of Journals as reviewer (in last five years)

AIChE Journal,
Applied Materials & Interfaces (ACS),
Bioresources and Bioprocessing
Biotechnology Journal,
Catalysis Science & Technology
Chemical Engineering Journal,
Chemistry of Materials,
Chemical Papers,
Chemical Engineering and Technology
Colloid and Polymer Science
Current Organic Chemistry Energy Conversion and Management
Energy & Fuels
Green Chemistry
International Journal of Chemical Engineering,
Industrial and Engineering Chemistry Research
Journal of Analytical and Applied Pyrolysis,
Journal of Chemical Technology & Biotechnology,
Journal of Chromatography A,
Journal of the Chemical Society
Journal of Chemical & Engineering Data
Journal of Functional Foods,
Journal of Hazardous Materials,
Journal of Organic Chemistry,
Korean Journal of Chemical Engineering
Langmuir,
Natural Product Research,
Nuclear Engineering and Design
Organic Process Research & Development
Polymer Bulletin,
Process Biochemistry
RSC Advances,
Separation and Purification Technology
Separation Science and Technology,
Ultrasonics Sonochemistry,

Detailed publication list(as on July 2016)
(https://scholar.google.co.in/citations?user=MnxfrD0AAAAJ&hl=en)

Continuous cane sugar inversion process using immobilized invertase, AC Koli, VG Gaikar - Journal of Chemical Technology and Biotechnology, 2016
Phytosynthesis of Silver Nanoparticles Using Walnut (Juglans regia) Bark with Characterization of the Antibacterial Activity against Streptococcus mutans ND Thakur, VG Gaikar, D Sen, S Mazumder, Analytical Letters, 2016
Parametric optimization and modeling of batch extraction process for extraction of betulinic acid from leaves of Vitex Negundo Linn, SV Taralkar, S Chattopadhyay, VG Gaikar - Separation Science and Technology, 2016
Preparation of ZnO/MWCNT/PP composite film and its application as multifunctional protective film, P Upasani, TV Sreekumar, VG Gaikar, N Jha, Polymer Composites, 2016
Development of polystyrene adsorbents functionalized with heterocyclic ligands for selective adsorption of CO 2 from CH 4 and N 2, PKKS Heer, KM Khot, VG Gaikar, Separation and Purification Technology 158, 212-222, 2016
Molecular design of a novel ligand for Menshutkin complexation of Bi (iii) from aqueous acidic copper sulfate electrolyte solutions and experimental investigations, JS Arora, VG Gaikar, RSC Advances 6 (46), 39663-39674, 2016
Molecular Dynamics: A Tool for Undergraduate Engineering Students to Transform Their Understanding of Chemistry at Molecular Level, MB Singh, VG Gaikar, Journal of Engineering Education Transformation, 2016
Synthesis, characterization and application of γ-MnO 2/graphene oxide for the selective aerobic oxidation of benzyl alcohols to corresponding carbonyl compounds, MM Kadam, KB Dhopte, N Jha, VG Gaikar, PR Nemade, New Journal of Chemistry, 2016
Need of Promotion of Innovation in Indian Engineering Institutes, VG Gaikar, The Mind of an Engineer, 287-296
Parametric Optimization and Modeling of Batch Extraction Process for Extraction of Betulinic Acid from Leaves of Vitex Negundo Linn, SV Taralkar, S Chattopadhyay, VG Gaikar, Separation Science and Technology, 2015
Intrinsic Kinetics of Esterification of Fatty Acids Catalyzed by Supported Ionic Liquid Catalysts, PKKS Heer, DD Chabukswar, VG Gaikar,Chemical Engineering & Technology 38 (8), 1416-1424

Mathematical model for reactive recovery of invertase by chemical permeabilization of baker's yeast, AC Koli, PB Subhedar, S Pamidipati, VG Gaikar, Journal of Chemical Technology and Biotechnology
Process Intensification of Upgradation of Crude Oil and Vacuum Residue by Hydrodynamic Cavitation and Microwave Irradiation, KB Ansari, NH Loke, AB Pandit, VG Gaikar, R Sivakumar, R Kumar, S Das, Indian Chemical Engineer, 57(3-4), 256-281, 2016
Pulse Chromatographic Studies of Adsorption of CO2, CH4, and N2 Using Amine Functionalized Polystyrene Adsorbents, KM Khot, PKKS Heer, RB Biniwale, VG Gaikar Separation Science and Technology 50 (5), 718-728
Experimental and DFT studies for selective separation of Sb (III) and Sb (V) from mixtures with Zr (IV)/Co (II) using thiourea grafted polystyrene adsorbent, JS Arora, U Joshi, VG Gaikar, SM Ali, RSC Advances 5 (87), 71393-71401
Investigations of clustering of ions and diffusivity in concentrated aqueous solutions of lithium chloride by molecular dynamic simulations, MB Singh, VH Dalvi, VG Gaikar RSC Advances 5 (20), 15328-15337
Equilibrium Adsorption Studies of CO2, CH4, and N2 on Amine Functionalized Polystyrene, KM Khot, PKKS Heer, RB Biniwale, VG Gaikar Separation Science and Technology 49 (15), 2376-2388
Green hydrotropic extraction technology for delignification of sugarcane bagasse by using alkybenzene sulfonates as hydrotropes, KB Ansari, VG Gaikar Chemical Engineering Science 115, 157-166
Density, Viscosity, and Interfacial Tension of Binary Mixture of Tri-iso-amyl Phosphate (TiAP) and n-Dodecane: Effect of Compositions and Gamma Absorbed Doses ML Singh, SC Tripathi, M Lokhande, PM Gandhi, VG Gaikar, Journal of Chemical & Engineering Data 59 (4), 1130-1139
Correlations among Composition, Temperature, and Density, Viscosity, or Derived Thermodynamic Properties of Binary Mixtures of Tri-n-butyl Phosphate with n-Hexane or n-Dodecane, ML Singh, SC Tripathi, PPK Venkata, VG Gaikar Industrial & Engineering Chemistry Research 53 (10), 3795-3804
Pressmud as an alternate resource for hydrocarbons and chemicals by thermal pyrolysis KB Ansari, VG Gaikar, Industrial & Engineering Chemistry Research 53 (5), 1878-1889
Tri-n-butyl phosphate+ n-dodecane mixtures: experimental density and viscosity, derived thermodynamic properties and equation of states. Contributed Paper MS-05 ML Singh, SC Tripathi, VG Gaikar, Proceedings of chemical engineering in nuclear technology-national seminar , 2015..

Reaction network modelling for kinetic parameters of pyrolytic reactions of CHON extractants in nuclear fuel processing waste management. Contributed Paper IT-07
VG Gaikar, V Thaore, Proceedings of chemical engineering in nuclear technology-national seminar, 2015

Theoretical and experimental studies for selective removal of antimony from zircaloy using thiourea grafted polystyrene adsorbent. Contributed Paper MS-01
JS Arora, VG Gaikar
Proceedings of chemical engineering in nuclear technology-national seminar ...

Molecular dynamics simulation of lithium chloride in water, MB Singh, VG Gaikar
Proceedings of chemical engineering in nuclear technology-national seminar ...

Impact of the degree of functionalization of graphene oxide on the electrochemical charge storage property and metal ion adsorption, MM Kadam, OR Lokare, KVMK Kireeti, VG Gaikar, N Jha, RSC Advances 4 (107), 62737-62745

Kinetic model development for steam pyrolysis of dimethylformamide in a tubular reactor
VB Thaore, VG Gaikar
Industrial & Engineering Chemistry Research 52 (31), 10601-10608

Esterification of Palm Fatty Acid Distillate Using Heterogeneous Sulfonated Microcrystalline Cellulose Catalyst and Its Comparison with H2SO4 Catalyzed Reaction
DD Chabukswar, PKKS Heer, VG Gaikar
Industrial & Engineering Chemistry Research 52 (22), 7316-7326

Sorption behavior of thiourea-grafted polymeric resin toward silver ion, reduction to silver nanoparticles, and their antibacterial properties
P Kumar, KB Ansari, AC Koli, VG Gaikar
Industrial & Engineering Chemistry Research 52 (19), 6438-6445

Experimental and Theoretical Investigations of Consequence of Ionic Liquid Anion on Copper (I) Catalyzed Reaction of Aryl Iodide and Thiols
KM Deshmukh, RS Madyal, ZS Qureshi, VG Gaikar, BM Bhanage
Industrial & Engineering Chemistry Research 52 (13), 4747-4757

Synthesis of N, N, N′, N′-Tetraoctyl-3-oxapentane-1, 5-diamide (TODGA) and Its Steam Thermolysis-Nitrolysis as a Nuclear Waste Solvent Minimization Method
DD Dicholkar, P Kumar, PK Heer, VG Gaikar, S Kumar, R Natarajan
Industrial & Engineering Chemistry Research 52 (7), 2457-2469

Thermal Decomposition of Nitrated Tri-n-Butyl Phosphate in a Flow Reactor
LK Patil, VG Gaikar, S Kumar, UK Mudali, R Natarajan, ISRN Chemical Engineering 2012

Low molecular weight organogels and their application in the synthesis of CdS nanoparticles, P Kumar, MM Kadam, VG Gaikar

Industrial & Engineering Chemistry Research 51 (47), 15374-15385
Experimental and modeling studies on extraction of amyrins from latex of mandar(Calotropis gigantea), SJ Wagh, JG Gujar, VG Gaikar Indian Journal of Chemical Technology 19 (6), 427-433
Selective removal of silver impurity from Oxaliplatin by sorption on functionalized polymer, P Kumar, KB Ansari, VG Gaikar, Industrial & Engineering Chemistry Research 51 (43), 14209-14217
Rheological characterization of mixtures of cetyl trimethylammonium bromide and sodium butyl benzene sulfonate in aqueous solutions KV Padalkar, OR Pal, VG Gaikar Journal of Molecular Liquids 173, 18-28
Modeling and optimizing of steam pyrolysis of dimethyl formamide by using response surface methodology coupled with Box-Behnken design DD Dicholkar, VG Gaikar, S Kumar, R Natarajan Journal of Analytical and Applied Pyrolysis 96, 6-15
Purification of artemisinin from Artemisia annua extract by sorption on different ligand loaded polymeric adsorbents designed by molecular simulation AR Patil, JS Arora, VG Gaikar Separation Science and Technology 47 (8), 1156-1166
Hydrotropic extraction of reserpine from Rauwolfia vomitoria Roots RA Sharma, VG Gaikar Separation Science and Technology 47 (6), 827-833
Direct determination of tri-n-butyl phosphate by HPLC and GC methods DD Dicholkar, LK Patil, VG Gaikar, S Kumar, UK Mudali, R Natarajan Journal of Radioanalytical and Nuclear Chemistry 291 (3), 739-743
Is sodium cinnamate a photoswitchable hydrotrope? LP Devendra, VG Gaikar Journal of Molecular Liquids 165, 71-77
A density functional theory analysis of zirconium isotopic fractionation JS Arora, VG Gaikar Proceedings of DAE-BRNS biennial symposium on emerging trends in separation ...
Designing of ligands for solvent extraction of Cs+ using molecular modeling approach SK Nagappayya, VG Gaikar, S Musharaf Ali Desalination and Water Treatment 38 (1-3), 1-7
Steric effects of trialkyl phosphates on the extraction of uranyl cation RS Madyal, VG Gaikar Desalination and Water Treatment 38 (1-3), 166-178

Studies on steam pyrolysis of amides as a waste solvent management method
DD Dicholkar, VG Gaikar, S Kumar
Energy Procedia 7, 534-539

Purification of forskolin by adsorptive separation using functionalized polymer bearing specific ligands designed by molecular simulation
LP Devendra, VG Gaikar
Industrial & Engineering Chemistry Research 50 (20), 11667-11676

Diesel Desulfurization Using Reactive Adsorption on Metal Impregnated Functionalized Polymer
YP Koparkar, VG Gaikar
Separation Science and Technology 46 (10), 1647-1655

Design and Synthesis of Polymer-Bound Penta-aza Ligand for Selective Adsorptive Separation of Cobalt (II) from Zirconium (IV)
P Kumar, RS Madyal, U Joshi, VG Gaikar
Industrial & Engineering Chemistry Research 50 (13), 8195-8203

Purification and recovery of curcuminoids from Curcuma longa extract by reactive sorption using polymeric adsorbent carrying tertiary amine functional group
AR Patil, VG Gaikar
Industrial & Engineering Chemistry Research 50 (12), 7452-7461

Intensification and Selectivity Modulation of Ion-Exchange Resin Catalyzed Alkylation of Phenol by Microwave
AA Ali, VG Gaikar
Industrial & Engineering Chemistry Research 50 (11), 6556-6566

Microwave-assisted process intensification of synthesis of thymol using carbonized sulfonic acidic resin (CSA) catalyst
AA Ali, VG Gaikar
Industrial & Engineering Chemistry Research 50 (11), 6543-6555

Radiation induced changes in viscosity and interfacial tension of tri-isoamyl phosphate-n-dodecane-nitric acid system
ML Singh, M Naik, M Bindu, M Lokhande, SC Tripathi, VG Gaikar
Proceedings of the national symposium on radiation and photochemistry ...

Microwave-assisted extraction of forskolin from coleus roots and its purification by adsorptive separation using functionalized polymer designed by molecular simulation
LP Devendra, VG Gaikar
Industrial & Engineering Chemistry Research 49 (19), 9271-9278

Extraction of aleuritic acid from seedlac and purification by reactive adsorption on functionalized polymers
SK Nagappayya, VG Gaikar

Industrial & Engineering Chemistry Research 49 (14), 6547-6553
Experimental and modeling studies on extraction of catechin hydrate and epicatechin from Indian green tea leaves JG Gujar, S Chattopadhyay, SJ Wagh, VG Gaikar The Canadian Journal of Chemical Engineering 88 (2), 232-240
Experimental and modeling studies on microwave-assisted extraction of thymol from seeds of Trachyspermum ammi (TA) JG Gujar, SJ Wagh, VG Gaikar Separation and Purification Technology 70 (3), 257-264
Synthesis of polymer bound penta-aza ligand for selective adsorptive separation of cobalt (II) from zirconium (IV) P Kumar, VG Gaikar International conference on Asian nuclear prospects 2010
Designing of ligands for extraction of Cs+ using molecular modelling approach KN Shobha, VG Gaikar, SK Musharraf Proceedings of DAE-BRNS biennial symposium on emerging trends in separation ...
Crown ether based novel ligands for the selective removal of Cs+ and Sr 2+ from the nuclear waste KN Shobha, VG Gaikar, SK Musharaf Ali International conference on Asian nuclear prospects 2010
Steric effects of trialkyl phosphates on the extraction of uranyl cation VG Gaikar, RS Madyal Proceedings of DAE-BRNS biennial symposium on emerging trends in separation ...
Design of ligands for extraction of Sr 2+ and Cs+ A Ali, VG Gaikar, SK Musharraf Proceedings of DAE-BRNS biennial symposium on emerging trends in separation ...
Hydrotropic extraction process for recovery of forskolin from Coleus forskohlii roots SP Mishra, VG Gaikar Industrial & Engineering Chemistry Research 48 (17), 8083-8090
Vapor Pressure Osmometry and Conductivity Studies of Aqueous Solutions of Sodium Alkyl Glycol Sulfates and Sodium Alkyl Carbitol Sulfates as Hydrotropes VB Wagle, VG Gaikar Journal of Chemical & Engineering Data 54 (6), 1775-1781
Partitioning of o/p-Nitrophenols in the Presence of Hydrotropes in Aqueous Solutions AS Negi, VG Gaikar Separation Science and Technology 44 (3), 734-752

Characterization of mixed micelles of sodium cumene sulfonate with sodium dodecyl sulfate and cetyl trimethylammonium bromide by SANS, FTIR spectroscopy and NMR spectroscopy
KV Padalkar, VG Gaikar, VK Aswal
Journal of Molecular Liquids 144 (1), 40-49

Batch and column adsorption of Cu (II) on unmodified and oxidized coir
SR Shukla, VG Gaikar, RS Pai, US Suryavanshi
Separation Science and Technology 44 (1), 40-62

Micro-solvation of the Zn 2+ ion—a case study
S De, SM Ali, A Ali, VG Gaikar
Physical Chemistry Chemical Physics 11 (37), 8285-8294

Small angle neutron scattering studies of mixed micelles of sodium cumene sulphonate with cetyl trimethylammonium bromide and sodium dodecyl sulphate
KV Padalkar, VG Gaikar, VK Aswal
Pramana 71 (5), 953-957

Optimization of primary enrichment section of mono-thermal ammonia–hydrogen chemical exchange process
MR Sawant, KV Patwardhan, AW Patwardhan, VG Gaikar, M Bhaskaran
Chemical Engineering Journal 142 (3), 285-300

Molecular simulation of sodium butyl benzene sulfonate at air–water interface and in aqueous solution
VS Kabra, VG Gaikar
Journal of Molecular Liquids 142 (1), 143-149

Extraction of piperine from Piper nigrum (black pepper) by aqueous solutions of surfactant and surfactant+ hydrotrope mixtures
KV Padalkar, VG Gaikar
Separation Science and Technology 43 (11-12), 3097-3118

Effect of ejector configuration on hydrodynamic characteristics of gas–liquid ejectors
S Balamurugan, VG Gaikar, AW Patwardhan
Chemical Engineering Science 63 (3), 721-731

Characterization of mixed micelles of structural isomers of sodium butyl benzene sulfonate and sodium dodecyl sulfate by SANS, FTIR spectroscopy and NMR spectroscopy
VG Gaikar, KV Padalkar, VK Aswal
Journal of Molecular Liquids 138 (1), 155-167

Effect of geometry on mass transfer characteristics of ejectors
S Balamurugan, MD Lad, VG Gaikar, AW Patwardhan
Industrial & Engineering Chemistry Research 46 (25), 8505-8517

Modeling of monothermal ammonia–hydrogen chemical exchange column using a non-equilibrium model
KV Patwardhan, AW Patwardhan, VG Gaikar, M Bhaskaran
Chemical engineering science 62 (15), 4077-4094

Hydrodynamics and mass transfer characteristics of gas–liquid ejectors
S Balamurugan, MD Lad, VG Gaikar, AW Patwardhan
Chemical Engineering Journal 131 (1), 83-103

Purification of Glucose Oxidase and β-Galactosidase by Partitioning in a PEG-Salt Aqueous Two-Phase System in the Presence of PEG-Derivatives
SB Dhoot, JM Dalal, VG Gaikar
Separation Science and Technology 42 (8), 1859-1881

Effect of temperature on aggregation behavior of aqueous solutions of sodium cumene sulfonate
VB Wagle, PS Kothari, VG Gaikar
Journal of molecular liquids 133 (1), 68-76

Hydrodynamic characteristics of gas–liquid ejectors
S Balamurugan, VG Gaikar, AW Patwardhan
Chemical Engineering Research and Design 84 (12), 1166-1179

Selective solubilization of nitrophenols and adsorption on ion exchange resins in nonaqueous conditions
KP Akre, RK Morankar, VG Gaikar
Separation science and technology 41 (15), 3409-3430

Permeabilization of Aspergillus niger by reverse micellar solutions and simultaneous purification of catalase
B Manocha, VG Gaikar
Separation science and technology 41 (14), 3279-3296

Simulation of the mono-thermal ammonia hydrogen chemical exchange tower as a reactive absorption system
MR Sawant, AW Patwardhan, VG Gaikar, M Bhaskaran
Industrial & engineering chemistry research 45 (20), 6745-6757

Adsorption of lactic acid on weak base polymeric resins
MJ Dethe, KV Marathe, VG Gaikar
Separation science and technology 41 (13), 2947-2971

Aqueous two-phase partitioning of glucose isomerase from actinoplanes missouriensis in the presence of PEG-derivatives and its immobilization on chitosan beads
SC Dolia, VG Gaikar
Separation science and technology 41 (12), 2807-2823

Recovery of 1, 4-Dimethyl Piperazine from Aqueous Solutions Using Polymeric Adsorbent and Ion-Exchange Resins
KP Akre, VG Gaikar
Separation science and technology 41 (8), 1593-1617

Osmotic and activity coefficients of short-chain alkyl benzene sulfonates by vapor pressure osmometry
VB Wagle, VG Gaikar
Journal of Chemical & Engineering Data 51 (3), 886-891

Aqueous hydrotropic solution as an efficient solubilizing agent for andrographolide from andrographis paniculata leaves
SP Mishra, VG Gaikar
Separation science and technology 41 (06), 1115-1134

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YP Koparkar, VG Gaikar
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VG Gaikar, CB Patel
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DV Dandekar, VG Gaikar
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R Bansal-Mutalik, VG Gaikar
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DV Dandekar, VG Gaikar
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Extraction of piperine from Piper nigrum (black pepper) by hydrotropic solubilization
G Raman, VG Gaikar
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VG Gaikar, HM Anasthas
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PR Babu, VG Gaikar
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Journal of applied polymer science 73 (7), 1117-1130

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HM Anasthas, VG Gaikar
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VG Gaikar, PV Phatak
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Effect of surface active additives on partitioning of proteins and enzymes in poly (ethylene glycol)/dextran aqueous two-phase systems
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Journal of Chemical Technology and Biotechnology 67 (4), 329-332

Adsorptive recovery of naphthenic acids using ion-exchange resins
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Solubilities of o-and p-Chlorobenzoic Acids and o-and p-Nitroanilines in N, N-Dimethylformamide+ Water
PV Phatak, VG Gaikar
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VG Gaikar, GK Sau
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Dissociation extraction: Prediction of separation factor and selection of solvent VG Gaikar, MM Sharma Solvent Extraction and Ion Exchange 3 (5), 679-696

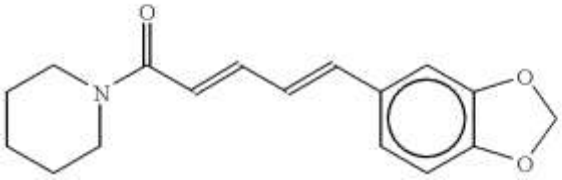
Patent List

1. Patent No: US 09/481,842

Inventor's Name: VILAS GAJANAN GAIKAR, DEEPAK VIJAY DANDEKAR
Title: Plant extracts
Country: US
Number: US 6224877 B1
Year: 2001
Abstract: The present invention relates to a process for extraction of curcuminoids from Curcuma species, which comprises the steps of contacting the rhizome of Curcuma species with an aqueous hydrotrope solution at a temperature in the range of 0-100° C. for extraction of curcuminoids, separating the solution obtained from the solid residue, and recovering the curcuminoids from the solution by known methods.

2. Patent No: US 09/481,420
Inventor's Name: VILAS GAJANAN GAIKAR, GIRIJA RAMAN
Title: Contacting the fruit of piper species with aqueous hydrotrope solution; separating the solution from the solid residue; and recovering piperine from the solution by a method selected from a group consisting of dilution and solvent extraction
Country: US
Number: US 6365601 B1
Year: 2002
Abstract:
The present invention relates to a process for extraction of piperine of Formula I from the fruits of Piper species, comprising the steps of:

Formula 1



contacting the fruit of piper species with aqueous hydrotrope solution at a temperature in the range of 0-100° C. and separating the solution from the solid residue by known methods, and recovering piperine from the solution by known methods.

3. Patent No: PCT/IN2000/000072
Inventor's Name: VILAS GAJANAN GAIKAR, HYACINTH MARY ANASTHAS
Title: A process for separating o- and p-substituted benzene compounds
Country:
Number: WO 2002010097 A1
Year: 2002
Abstract: A process for producing o- and p- substituted benzene compounds separately from a binary mixture in any proportions of said compounds. The said o- and p- substituted benzene compounds comprise isomeric 1,2 substituted benzene compound of Formula (1) and 1,4 substituted benzene compound of Formula (2) respectively, wherein R1 is selected from the group of -OH, -COOH, -NH2, N(R3)(R4) where R3 and R4 are from the group -H, (CH2)nCH3; n=0-4; and R2 is selected from the group consisting of -(CO-CH3), -(NH2), -(OH), -(NO2), -(X), -

(OCH3), -COOH, -CHO, -(OCH2CH3) and X is halogen selected from F, CL, Br and I. The process basically involves (i) treating the said binary mix first with an organic solvent to phase separate by preferential solubilisation one of the said two compounds, (ii) contacting the solution phase with an ion exchange resin for preferentially adsorbing and recovering further any of said undissolved compound present to thereby further phase separate from the said compound in said solution phase the other compound as substantially pure undissolved compound, and (iii) recovering from the said solution phase of step (ii) above the said soluble compound in substantially pure form by desolventising the solution phase in conventional manner. The process provides for simple and cost effective method of producing pure compounds of Formula (1) and Formula (2) separately in high yield.

4. Patent No: 1238/DEL/1999

Inventor's Name: GIRIJA RAMAN, VILAS GAJANAN GAIKAR
Title: AN IMPROVED PROCESS FOR EXTRACTION OF PIPERINE FROM PIPER SPECIES
Country: INDIA
Number: 191584
Year: 2003
Abstract: All improved process for extraction of piperine of formula 1 from piper species (Formula Removed) i. contacting the piper species with an aqueous hydrotrope solution at temperature from 0-100 0C and separating the solution obtained from the solid residue knov/n methods. ii. Recovering the piperine from the solution obtained at the end of step (1) by solvent extraction with organic solvent after dilution with water or without dilution and then desolventising to recover piperine in pure from or so as to bring the concentration of hydrotrope sufficiently low to precipitate piperine from the solution in solid form and separating the precipitated piperine from the solution obtained, followed by washing with water.

5. Patent No: 99/MUM/2004 A

Inventor's Name: GAIKAR VILAS GAJANAN, MISHRA SANJAY PREMNARAYAN
Title: PROCESS FOR PRODUCTION OF DIOSGENIN FROM DIOSCOREA SPECIES
Country: INDIA
Number:
Year: 2007
Abstract: The present invention relates to a process for the production of diosgenin of formula 1 from the rhizomes of dioscorea species,comprising the steps of: contacting the rhizome of dioscorea species for the extraction of dioscin (formula 2) with aqueous hydrotrope solution at a temperature in the range of 0-200ºC and separating the solution from the solid residue by known methods.The clear solution obtained was treated with an acid of the concentration in the range of 0-200ºC for the hydrolysis of dioscin,without any decomposition,to diosgenin and recovering diosgenin from the solution by known methods.

6. Patent No: 506/DEL/1999

Inventor's Name: DR. V. G. GAIKAR, MS. HYACINTH MARY ANASTHAS
Title: A PROCESS FOR SEPARATION OF ISOMERIE SUBSTITUTED BENZENE COMPOUNDS FROM A BINARY MIXTURE
Country: INDIA
Number: 217390
Year: 2008
Abstract: The present invention relates to a process for separation of isomeric 1, 2 substituted benzene compound of Formula 1 and 1,4 substituted benzene compound of Formula 2 from a binary mixture in any proportions of said compounds. The process of present invention leads to production of isomeric 1,2 substituted benzene compounds of Formula 1 and 1,4 substituted benzene compound of Formula 2 separately wherein Rl is selected from the group -OH, -COOH, -NH2, N(R3) (R4) where R3 and R4 are from the group -H, (CH2) nCH3 ; n = 0-4 ; and R2 is selected from the group consisting of -(CO-CH3), -(NH2), -(OH), -(N02), -(X), -(OCH3), -COOH, -CHO, -(OCH2CH3) and X is halogen selected from F, CL, Br and I from a binary mixture in any proportions of said isomeric compounds of Formula 1 and 2. The process steps comprise phase separation by preferential solubilisation of one of the two compounds in a solution phase and the other as the substantially pure undissolved compound preferentially absorbing solution phase by ion exchange resin and recovering further any of said undissolved compound present in the said solution phase as substantially pure undissolved compound and finally recovering from the solution phase the soluble compound in substantially pure form by disolventising the solution phase in conventional manner

7. Patent No: 971/MUM/2004

Inventor's Name: RAMESH SHETTAR, V. G. GAIKAR, SANGEETA SRIVASTAVA, LEENA P DEVENDRA
Title: PROCESS OF RECOVERY OF PURE CURCUMINS FROM TURMERIC RHIZOMES
Country: INDIA
Number: 205792
Year: 2008
Abstract: A method for extraction of curcumins from turmeric rhizomes comprising of : a) Comminuting and drying of the wet turmeric rhizomes b) Extraction of curcumin from the dried rhizomes obtained in step (a) by suspending the rhizomes in aqueous alcohol solvent system under vigorously agitating conditions for a sufficient amount of time at a temperature in the range between 25-80° C. c) isolating the aqueous alcoholic solution of curcumins from the solid residue of turmeric from the suspension of step (b). d) Concentrating the isolated extract solution obtained in step (c) by 80-90 % evaporating the solvent and volatile oils of turmeric from the extract solution where the extent of evaporation is limited to 80-90 % of the original volume. t e) Crystallizing curcumins in purified form from the concentrated extract of step (d) by temperature induced solvent crystallization at a temperature in the range between 5-30°C. f) Separating the crystallized curcumin in pure form, from the remaining liquid solution.

8. Patent No: 1241/DEL/1999

Inventor's Name: VILAS GAJANAN GAIKAR, DEEPAK VIJAY DANDEKAR
Title: A PROCESS FOR EXTRACTION OF CURCUMINOIDS FORM CURCUMA SPECIES
Country: INDIA
Number: 252596
Year: 2012
Abstract: A process for the extraction of Curcuminoids from Curcuma species: This invention provides is an extraction process with an organic solvent for recovery of curcuminoids from the aqueous solution of hydrotrope after dilution of the hydrotrope solution with water or without dilution at a particular temperature range. The organic solvent selected for the extraction may be immiscible with water such as a group consisting of aromatic hydrocarbons, aliphatic hydrocarbons, halogenated hydrocarbons, ketones, ethers, esters, alcohols, amides and a mixtures thereof.

9. Patent No: 172/MUM/2009 A

Inventor's Name: GAIKAR VILAS GAJANAN, PANDIT ANIRUDDHA BHALCHANDRA, LELE PRAKASH BHASKAR
Title: PROCESS FOR PRODUCTION OF BIODIESEL FROM ACID OIL
Country: INDIA
Year: 2012
Abstract: Process for production of biodiesel from acid oil is disclosed wherein acid oil is contacted with an alcohol in countercurrent manner in the presence of an acid catalyst for esterification. Esterification is followed by saponification and thereafter transesterification of triglycerides, by an alcohol in the presence of an alkaline catalyst. In the overall process Fatty acid from acid oil is contacted with alcohol in multiple countercurrent steps wherein between two steps, organic and aqueous acid phases are separated by phase separation. Esterification of the fatty acids in the acid oil with alcohol in countercurrent manner and intensified by hydrodynamics cavitation has increased the efficiency of process to such extent that ratio of alcohol to free fatty acid of acid oil has considerably been reduced.

10. Patent No: 4142/MUM/2013 A

Inventor's Name: PROF. VILAS GAJANAN GAIKAR, MS. PARMINDER KAUR KHABINDER SINGH HEER, MR. KALPESH MOHAN KHOT
Title: AMINE FUNCTIONALIZED CO2 SELECTIVE POLYSTYRENE ADSORBENTS FOR CO2, CH4 AND N2 SEPARATION
Country: INDIA
Year: 2014
Abstract: The present invention relates to the synthesis of amine functionalized adsorbents for selective and reversible adsorption of CO2 for its separation from other gases, preferably CH4 and N2. The amine functionalized adsorbents are prepared by covalently bonding of amines to the polystyrene support for operational stability. The amines used for functionalization are selected from imidazole, N-methyl piperazine, dimethyl amine, diethanol amine, 4-hydroxymethyl pyridine and

2, 6-dihydroxy pyridine-4-carboxylic acid. The present invention also relates to the PSA process that utilizes the synthesized amine functionalized adsorbents for separation of CO2 and N2 and CO2 and CH4 in the absence of moisture.

11. Patent No: 473/MUM/2014
    Inventor's Name: VILAS GAJANAN GAIKAR, PARAG NEMADE, KIRAN DOPTE, MAHESH MARUTI KADAM, NEETU JHA
    Title: Synthesis of Graphene oxide / γ - MnO2 nanocomposite
    Country: INDIA
    Filed in Year: 2014
    Abstract: Flower and needle shaped γ-MnO2 supported on graphene oxide have been synthesized for the first time through chemical precipitation method. The efficiency of γ-MnO2/GO as a catalyst has been studied towards selective oxidation of benzyl alcohols to corresponding carbonyl compounds under mild reaction conditions as well as low catalyst loading with recyclability and by using atmospheric oxygen as green oxidising agent.

12. Patent Number 4214/MUM/2015
    Inventor's Name: VILAS GAJANAN GAIKAR, JYOTSNA ARORA
    Title: Synthesis of a novel hybrid phenonthroline-arne ligand for selective separation of Bi from copper electrolyte solutions,
    Country: India
    Filed in Year: 2015

Book Chapters

1. Title of Contribution: Need of Promotion of Innovation in Indian Engineering Institutes
   Title of Book: The Mind of an Engineer
   Editor(s) name(s): Dr. Purnendu Ghosh and Dr. Baldev Raj
   Publisher: Indian National Academy of Engineering (2016), New Delhi

2. Separation through reactions and other novel strategies, in 'reactions and Engineering' (Ed). R.A. Mashelkar and R. Kumar, Indian Academy of Sciences, Banalore, 1987

3. Title of contribution: Teaching is a Performing Art, Publisher Wipro, April 2011

Books

1. Title of Book: **Bioprocesses and Biotransformations**
   Authors: Mukesh Doble, Anil Kumar and Vilas G Gaikar
   Publisher: Marcel Dekker, New York (2004)

2. Title of Book: Professor M M Sharma Felicitation Series: Volume III Demonstration Experiments:
   Authors: K K Tiwari and V G Gaikar
   Publisher: Sevak Publications, 1997

List of papers presented at conferences/Seminars/invited Lectures

No	Title of the paper and Authors	Conference/Seminar
1	Laser Raman and Infrared studies of hydrotropes and related materials, S.B. Kartha, V.G. Gaikar, M.M. Sharma and V. B. Kartha	International Conference on Raman Spectroscopy, Calcutta, 1989
2	Separations with Hydrotropes V. G. Gaikar	Invited Lecture at seminar on ' Frontiers in Micro- and Macroemulsions' organized at Department of Chemical Technology,1991
3	Theory and design aspects of liquid-liquid extractors V. G. Gaikar	Invited Lecture National Seminar on Absorption and Liquid-Liquid extraction' organized by Ankleshwar Regional Center of Indian Institute of Chemical Engineers, 1992
4	Relative merits of liquid-liquid extractors and their selection V. G. Gaikar	Invited Lecture at National Seminar on Absorption and Liquid-Liquid extraction' organized by Ankleshwar Regional Center of Indian Institute of Chemical Engineers., 1992
5	Reactive Separation Processes V. G. Gaikar	Invited Lecture at National Seminar on 'Advances in Separation Technology' organized by Indian Institute of Chemical Engineers(Pune Chapter), June 1994
6	Estimation of Hydrotrope-Solute Interactions using distribution studies V. G. Gaikar	International Conference on' Challenges facing Fats, Oleochemicals and Surfactants in 21st Century' Bombay, 1995
7	Effect of molecular structure on hydrotropic properties of alkylbenzene sulfonates **V. G. Gaikar**, V. Latha, B.Das	International Conference on' Challenges facing Fats, Oleo-chemicals and Surfactants in 21st Century' Bombay,1995
8.	Novel applications of hydrotropes **V. G. Gaikar**	National seminar on 'Recent developments in Surfactant Science and Technology, 25-26 October 1996, UDCT, Mumbai
9.	New Generation surfactants **V.G. Gaikar**	Seminar on New Generation Surfactants: Systems and Applications, Jan 1998, ICI Research Centre, Mumbai
11	Membrane Separation processes Concentration polarization and fouling **V.G.Gaikar**	Membrane Processes in Oil Processing Industry, Seminar organized by Oil Technologists of India, Mumbai, 2000
12	Reactive separation Processes in Chemical and Pharmaceutical Industries **V.G.Gaikar**	Invited lecture at Seminar on 'Cost reduction by Application of Newer separation techniques'

		organized by Indian Chemical Manufacturer's Association, Mumbai 2001
13	Novel extraction techniques for natural products **V.G.Gaikar**	Invited Lecture at Seminar on 'Cost reduction by Application of Newer separation techniques' organized by Indian Chemical Manufacturer's Association, Mumbai 2001
14.	Microwave assisted extraction of curcuminoids from curcuma longa species Deepak Dandekar and **V.G.Gaikar**	13th Research Scholar' Meet, organized by Indian Chemical Society, Mumbai, Feb.2000
15.	Hydrotropy and applications (Extraction of piperine from pepper) Girija Raman and **V.G. Gaikar**	13th Research Scholar' Meet, organized by Indian Chemical Society, Mumbai, Feb.2000
16	Enhancement of hydrolytic reaction of benzyl chloride in hydrotrope solutions Dalia Mathews and V.G. Gaikar	Indian Council of Chemists 19th Conference, Kuvempu University, Nov 2000
17	Extraction of curcuminoids under microwave irradiation, Deepak V Dandekar and **V.G.Gaikar**	13th Research Scholars Meet by the Indian Chemical Society held at U.D.C.T, Mumbai (February 2001).
18	Hydrotropic extraction of curcuminoids from Curcuma longa (Turmeric) rhizomes" Deepak V Dandekar and **V.G.Gaikar**	Symposium on Emerging Trends in Chemical Research by the Indian Chemical Society held at U.D.C.T. Mumbai (October 2001).
19	Investigation of the hydrolytic reaction of benzyl chloride in hydrotropic medium" Daliya S. Mathew and **V.G.Gaikar**	Symposium on Emerging Trends in Chemical Research by the Indian Chemical Society held at U.D.C.T. Mumbai (October 2001).
20	SANS studies of hydrotrope with conventional surfactant cetyltrimethyl ammonium bromide forming complex fluid", O.R.Pal, **V.G.Gaikar**, J.V.Joshi, P.S.Goyal and V.K.Aswal	Symposium on Emerging Trends in Chemical Research by the Indian Chemical Society held at U.D.C.T. Mumbai (October 2001).
21	Effect of hydrotropes on hydrolysis of benzyl chloride in aqueous media" D. S. Mathew and **V.G.Gaikar**	International Conference on Progress in Dispersed Systems held at University of Kolkatta, Kolkatta (January 2002).
22	Kinetics of crystallization of curcuminoids from aqueous hydrotrope solutions" D. V Dandekar and **V.G.Gaikar**	International Conference on Progress in Dispersed Systems held at University of Kolkatta, Kolkatta (January 2002).
23	Characterization of butyl benzene sulphonate + CTAB mixtures by small angle neutron scattering studies" O.R.Pal, **V.G.Gaikar**, J.V.Joshi, P.S.Goyal and V.K.Aswal	International Conference on Progress in Dispersed Systems held at University of Kolkatta, Kolkatta (January 2002).

24	Synthesis of Benzyl Salicylate from hydrotropic solution of Sodium Salicylate, D. S. Mathew and **V.G.Gaikar**	14th Research Scholars Meet by the Indian Chemical Society held at K.C. College, Mumbai (February 2002).
25	Adsorptive separations of acidic compounds using functionalized polymers**, V.G. Gaikar**,	INSA-KOSEF Seminar on Adsorbents and Adsorption Technologies, at South Korea, Novemebr, 2002
26	Adsorptive separations of acidic/basic mixtures using functionalized polymers **V.G. Gaikar**	First Joint Conference of Indian Institute of Chemical Engineers and American Institute of Chemical Engineers, Dec 27-29, 2004, Mumbai
27	Fouling of membranes: Remedial measures, **V. G. Gaikar**	FiltMembrane Technology Conference, Organized by Oils and Oleochemical Technology Department, UICT, April 9, 2005
28	Dehydration of acetic acid by azeotropic distillation **V.G. Gaikar**	PTA Conference, 1005, Reliance Industries Ltd, Hazira
29	Adsorptive recovery of Chemicals from waste streams, **V. G. Gaikar**	TEQIP Networking Conference, Dr. Babasaheb Ambedkar Technological University, Lonere, 2005
30	Molecular Modeling of Separations using functionalized Polymers, **V. G. Gaikar**	Department of Chemical Engineering, IIT, Powai, Mumbai 1st November 2007
31	Challenges in renewable energy sources, **V. G. Gaikar**	Seminar on Renewable resources for Energy, Heritage Institute of Technology, Kolkata, 19th September 2007
32	Reactive Separations using functionalized Polymers, **V. G. Gaikar**	IIChE-MRC, Mumbai, 18th October 2007
33	Reverse Micellar Extraction and Recovery of Enzymes, **V. G. Gaikar**	National Seminar on 'surfactants and applications", organized by Department of Chemistry, M.S. University of Baroda, 30th October 2007
34	Phytochemicals and new strategies of extraction, **V. G. Gaikar**	Dow International Chemicals Co Ltd, Pune, 20th November 2007
35	Reactive Separation Processes, **V. G. Gaikar**	Ranbaxy Ltd., New Delhi, 16th July 2007
36	Reverse micellar extraction and recovery of Enzymes and proteins, **V. G. Gaikar**	CIT-COM, CIT-COM, Coimbatore Institute of Technology, Coimbatore, 27th August 2007
37	Innovation in Chemical Engineering, **V. G. Gaikar**	NOCIL RCD presentation, 12th July 2007
38	Manufacturing excellence through innovation, **V. G. Gaikar**	Jubilant Organizations, 7th May 2007

39	1. Fundamental separation processes 2. Special distillation method for non-ideal mixtures. 3. Newer strategies for isolation of natural products 4. Ion exchange resins as functionalized polymers	DST sponsored SERC School, "Advanced separation process", 22nd to 24th March 2007
40	Reactive sorption with functionalized polymers, **V. G. Gaikar**	Indian National Academy of Engineering Annual Convention, Dec 2008
41	Functionalized polymers as separating agent in fine chemical industry, **V. G. Gaikar**	Indo-German workshop IIT Chennai "18th Feb 2008
42	Reactive separation process, **V. G. Gaikar**	UGC Networking Conference, ICT Mumbai, 14th March 2008
43	Reactive separation processes with polymers, V. G. Gaikar	Reliance Industries Ltd (IPCL), Baroda, 22nd May 2008
44	Innovation in Chemical Engineering; Challenges for Chemical Engineers, V. G. Gaikar	PVP Institute of Engineering, Budhagaon, Sangli, 18th March 2009
45	Molecular modeling for reactive sorption, V. G. Gaikar	Refresher Course in Chemical Engineering, AMIC, 3rd April 2009
46	Biodiesel Technology using feed containing 90% free acid content, Yogesh Koparkar, K.N.Shobha and V.G.Gaikar	Knowledge and Innovation Fair'09 organised by Tata Power at Trombay Colony Sports complex, Chembur, Mumbai, 7th-8th May, 2009
47	Designing of ligands for extraction of Cs^+ using molecular modelling approach, K.N.Shobha and V.G.Gaikar,	22nd research scholars' Meet, (RSM-2010), Indian Chemical Society, at Sathaye College, Mumbai, 19th-20th February, 2010
48	Purification of curcuminoids extracted from *curcuma longa* by adsorption technique, Anil Patil and V.G.Gaikar,	22nd research scholars' Meet, (RSM-2010), Indian Chemical Society, at Sathaye College, Mumbai, 19th-20th February, 2010
49	Development of Novel Extraction and Purification techniques for some natural products, Leena D and V.G.Gaikar,	22nd research scholars' Meet, (RSM-2010), Indian Chemical Society, at Sathaye College, Mumbai, 19th-20th February, 2010
50	Designing of ligands for extraction of Cs^+ using molecular modelling approach, K.N.Shobha,V.G.Gaikar, Sk. Musharraf Ali,	SESTEC-2010-DAE-BRNS Biennial Symposium on Emerging Trends in Separation Science and Technology at IGCAR, Kalpakkam ,March 1 - 4, 2010
51	Steric effects of trialkyl phosphates on the extraction of Uranyl cation, R.S.Madyal and V.G.Gaikar	SESTEC-2010-DAE-BRNS Biennial Symposium on Emerging Trends in Separation Science and

		Technology at IGCAR, Kalpakkam ,March 1 - 4, 2010
52	Studies on steam pyrolysis of amides as a waste solvent management method", Deepak Dicholkar and V. G. Gaikar**,**	2nd International Conference on Asian Nuclear Prospects (ANUP}, in Young Researcher's Forum (YRF), IGCAR, Kalpakkam, India , 12-14th October, 2010
53	Optimization of steam pyrolysis of N, N- dimethyl formamide by Response Surface Methodology (RSM)" Deepak Dicholkar and V. G. Gaikar,	Research Scholar's Meet organized by Indian Chemical Society , N. G. Acharya and D. K. Marathe College, Chembur, Mumbai - 71, 25 – 26th February, 2011
54	Preparation of biodiesel from palm fatty acid distilled by using sulphonated carbohydrate catalyst" Deepak Chabukswar and V. G. Gaikar**,**	Research Scholar's Meet organized, Indian Chemical Society, N. G. Acharya and D. K. Marathe College, Chembur, Mumbai - 71, 25 -26th February, 2011
55	Polymer bound penta aza ligand for selective adsorptive separation of Co (II) from Zr (IV)" Pradipta Kumar and V. G. Gaikar,	2nd International Conference on Asian Nuclear Prospects (ANUP}, IGCAR, Kalpakkam, India , 12-14th October, 2010.
56	Computational modeling of metal phosphate complexation: The role of cone angle, "", Rupa Madyal and V. G. Gaikar,	India-EU Workshop in Environmental Materials and Modeling, Nagpur, 2010
57	Modeling on the interaction of crown ethers with Zn" Rupa Madyal**,** V.G. Gaikar, Anil Boda, Sk. M. Ali	DFT, Theoretical Chemistry Symposium (TCS10), IIT, Kanpur, 8th -10th Dec, 2010
58	Reactive adsorption for removal of 2,4-dichlorophenl impurities from aqueous solutions of 2,4-dichlorophenoxy acetic acid-dimethyl amine solutions" , Y. P. Koparkar, V.G. Gaikar,	India-EU Workshop in Environmental Materials and Modeling, Nagpur, 2010
59	Crown ether based novel ligands for the selective removal of Cs^{+} and Sr^{2+} from the nuclear waste" K.N.Shobha, V.G.Gaikar,	2nd international conference on Asian Nuclear Prospects [ANUP-2010], IGCAR, Kalpakkam, India , 12-14th October, 2010
60	Molecular simulation as a tool for improving separations	Conference on Technological Advancements in Chemical and Environmental Engineering (TACEE-2012) , March 23 – 24, 2012, BITS, Pilani
61	Role of Molecular Simulation in Chemical Engineering	National Conference on "The Role of Basic Sciences in Emerging Industrial Scenario (RBSEIS-2012)" in association with Indian Society for Technical Education (ISTE) chapter, Shri Ram Meghe College of Technology, Badnera, 7th April 2012
62	Hydrotropes and complex behaviour of their mixtures with surfactants	Pt. Madan Mohan Malviya Lecture series, Centre of Advanced Study, Department of Chemical

		Engineering, Banaras Hindu University, Varanasi, March 2012
63	Molecular Modelling as a Tool for Improving Adsorptive Separations of Organic and Inorganic Mixtures	2nd Indo-German Workshop on "Advances in Reaction and Separation Processes" Bad Herrenalb, Germany, 19th February 2012-22nd February 2012
64	Amine Functionalized Polymers For adsorption Separation of CO_2 From N_2 And CH_4	3rd Indo-Norwegian Seminar on CO_2 Capture: Leading High Science to Innovative Technologies 13th -14th February 2012, India Habitat Center, Gulmohar Hall, New Delhi
65	Complex Fluid behavior of mixtures of hydrotropes and surfactants in aqueous solutions	Symposium on Rheology of Complex Fluids, COMPFLU 2012, IIT-Guwahati, Aasam, 5th-8th January 2012
66	Molecular modeling as tool for organic and inorganic mixtures separations	International conference : Vistas in Chemistry 2011, Indira Gandhi Centre for Atomic Research, Kalpakkam-November 2011
67	Soft condensed matter: Structure and Dynamics	Chief Guest Address at SOFT-CHEM 2011-, Sinhgad College of Engineering, Pune, 5th July 2011
68	A process for removal of silver from crude Oxaliplatin by adsorptive separation to meet specification as per USP/BP, Kumar P., Ansari K. & Gaikar V. G.,	18th International Conference (POST ISCBC-2012), Institute of Advanced Study in Science & Technology (IASST), Assam
69	Low molecular weight organogels and their application in the synthesis of CdS nanoparticles, Kumar P., Kadam M. M. & Gaikar V. G.,	6th Mumbai Pune Soft Matter meeting, NCL, Pune & 18th International Conference (POST ISCBC-2012), IASST, Assam
70	Pressmud as an alternate resource to hydrocarbon fuels by a novel process of thermal pyrolysis followed by catalysis, Ansari K. & Gaikar V. G.,	18th International Conference (POST ISCBC-2012), IASST, Assam
71	Viscoelastic properties of aqueous solutions of surfactant and photoswitchable hydrotrope, Rathi N, Kadam M. M. & Gaikar V. G.,	6th Mumbai Pune Soft Matter meeting, NCL, Pune
72	A Density Functional Theory Analysis of Zirconium Isotopic fractionation, Arora J.S. & Gaikar V. G	6th Mumbai Pune Soft Matter meeting, NCL, Pune
73	A Density Functional Theory Analysis of Zirconium Isotopic fractionation, Arora J.S. & Gaikar V. G	DAE-BRNS Biennial Symposium on Emerging Trends in Separation Science and Technology, Mumbai, 2012
74	Ligand architecture for Uranyl cation, Madyal R.S. & Gaikar V. G	DAE-BRNS Biennial Symposium on Emerging Trends in Separation Science and Technology, Mumbai, 2012

75	Alternative Sustainable Technologies	UGC Networking resource Centre Workshop on" Alternative Sustainable Technologies, March 2012, ICT, Mumbai
76	Complex Mixtures of Hydrotropes with Surfactants in Aqueous Solutions and Their Applications	NEIST, Jorhat, 9th January 2012
77	Molecular simulation as a tool for selective separation of complex mixture of closely related compounds	Thadomal Shahani College of Engineering, 4th February 2012
78	Amine functionalised polymers for adsorptive separation of CO2 from N2 and CH4	2nd Indi-Norwegian Workshop on 'Advanced Separation Processes, New Delhi, 13th February 2012
79	Molecular Modelling as a Tool for Selective Separation of Complex Mixtures of Closely Related Compounds	2nd Indo-German Conference, Bad Harenalb, Germany, 21st February, 2012
80	Molecular Modelling as a Tool for Improving Separations	Department of physics, Leipzig University, 23rd February 2012
81	Hydrotropes and their Mixtures with Surfactants and Applications	Pandit Madan Mohan Malviya Lecture Series, BHU, 19th March 2012
82	Hydrotropy and Chemical Engineering Applications of Hydrotropes	DST SERC School, Dr. Babasaheb Ambedkar Technolgical University, Lonere, 26th March 2012
83	Microwave Assisted extraction of natural products	DST SERC school, Dr. Babasaheb Ambedkar Technolgical University, Lonere, 27th March 2012
84	Role of molecular modelling in Chemical engineering	National Conference for Advances in Chemical Engineering, Amaravati University, 8th April 2012
85	Molecular modelling as a tool for improving separations	National Conference on 'Advances in Chemical Engineering, BITS, Pilani, 22nd April 2012
86	SOFT Matter as Complex Fluids	UGC-NRC workshop on "Soft Matter', ICT, 7th June 2012
87	Basics of molecular modelling	UGC-NRC workshop on Molecular Modelling, June 2012, ICT.
88	Enabling Technologies for energy generation and optimization	National Seminar cum Workshop On Water and Energy: Sustainability and Security for Future Needs(WAVE 2012), DJ college of Engineering, Indian Institute of Chemical Engineers –Mumbai Regional Centre & Indian Desalination Association, September, 27-28, 2012

89	Fascinating World of Surface active materials	SPP School of Pharmacy and Technology Management, SVKM's NMIMS, DST-INSPIRE program, October 1-6, 2012
90	Hydrotropy and Newer Applications of Hydrotropes	SVKM's NMIMS School of Science National Education Day – 1st November, 2012
91	Enabling technologies for energy'	Training Program, Research Methodology, November 26-30, 2012, BATU, Lonere
92	Advances in Chemical Engineering	Key note lecture Faculty Development Program at MIT Academy of Engineering, Pune 03 Dec 2012
93	Chaired the session on Engineering Sciences	International Symposium on 'Scientific Interventions for Societal Development' 20th December, 2012, NEIST, Jorhat, Aasam
94	Molecular Modelling for engineering separation processes	Invited Lecture, Chemference 2012, Departments of Chemical Engineering, at IIT Bombay and ICT, 10-11th December 2012
95	Synthesis and Fabrication of Graphene Oxide Thin Film , Kadam M. M., Sravani M. B., Gaikar V.G. and Jha N	Carbon Materials-2012, 1-3 Nov, BARC Mumbai
96	Research Methodology and enabling Technologies, V G Gaikar	Dr. Babasaheb Ambedkar Technololgical University, Lonere, 30th November 2012
97	Enabling Technologies for Energy	Maharashtra Academy Engineering College, Pune, 2nd December 2012
98	Diffusivity of LiCl in water, Singh M.B. & Gaikar V. G.,	Soft Matter meeting, IIT, Mumbai, 12th Jan 2013
99	Effect of UV irradiation on viscoelastic properties of CTAB and photoswitchable molecule, Kadam M.M. & Gaikar V. G	Soft Matter meeting, IIT, Mumbai 12th Jan 2013
100	Advances in Bioenergy Systems	National Conference on "BioEngineering Sciences-Present Status: Future Perspectives "College of Engineering, Pune, 15-16th March 2013
101	Intensification in chemical process industries	Invited Lecture, ChemSpec 2013 Green Chemistry and Technology workshop, Bombay Exhibition Centre, Goregaon, Mumbai April 11, 2013
102	Recent Advances in Energy Generation and optimization	Key Note Lecture, International conference on 'Advances in Chemical engineering', NIT, Raipur, April 5, 2013
103	Separation Processes	Invited Talk, Indus MAGIC program, NCL, Pune, 2013

104	Engineering Aspects of Algal Growth in Photobioreactors	CSMCRI, Bhavnagar, 31st May 2013
105	National Seminar "Role of Bio-Energy in Sustainable Growth	30th & 31st August, 2013, MIT, Alandi
106	Need of Innovation	TEQIP Innovation Meet, ICT, Mumbai, 25th & 26th September 2013
107	Process Engineering Aspects of Bio-diesel Manufacturing	Workshop on " Intensifying and up-scaling of continuous processes (Indus CoP)", NCL, Pune, Dec 12th &13th 2013
108	Process Engineering Aspects of Bio-diesel Manufacturing	Guru Gobind Singh Indraprastha University, New Delhi, 28th Feb and 1st March 2014
109	Reaction network modeling for kinetic parameters of pyrolytic reactions of CHON extractants in nuclear fuel processing waste management V. G. Gaikar and V. B. Thaore	Chemical Engineering in Nuclear Technology (CHEMENT-2014), Indira Gandhi Center for Atomic Research, Kalpakkam,6th-7th March,2014
110	Process intensification and Reactive separations	Invited Lecture on Fine chemical technologies, Chemspec India 2014 , 11th April, 2014
111	Synthesis of Different Degree of Oxidation of Graphene oxide, M. M. Kadam, O.R. Lokare, V.M.K. K. Kota, V. G. Gaikar & N. Jha,	CHEMCON 2013
112	Synthesis of Graphene Oxide / γ -MnO_2 Nanocomposite., M. M. Kadam, V. G. Gaikar & N. Jha	CHEMCON 2013
113	Molecular Dynamics Simulation of Lithium Chloride in water, M. B. Singh and V. G. Gaikar	CHEMENT-2014, 06-07 March 2014, Kalpakkam, India
114	Theoretical and Experimental studies for Selective Removal of Antimony from Zircaloy using Thiourea Grafted Polystyrene Adsorbent, J.S. Arora & V. G. Gaikar*,	CHEMENT-2014, 06-07 March 2014, Kalpakkam, India
115	Steam pyrolysis of organic waste in a tubular reactor as a waste solvent minimization method., V. B. Thaore, D. D. Dicholkar & V. G. Gaikar	25th September TEQIP- Innovation Meet-2013, Institute of Chemical Technology
116	Amine Functionalized polystyrene adsorbents for CO_2 , methane and N_2 separation, K. M. Khot, P K. K. S Heer & V. G. Gaikar*,	25th September TEQIP- Innovation Meet-2013, Institute of Chemical Technology
117	Molecular recognition Technology, J. S. Arora, R. S. Madyal, A. Patil, K.N. Shobha, L. Devendra & V. G. Gaikar*,	25th September TEQIP- Innovation Meet-2013, Institute of Chemical Technology
118	Thermal pyrolysis of ligno-cellulosic biomass with in situ vapor upgradation for renewable hydrocarbons and chemicals. K. B. Ansari and V.G. Gaikar	25th September TEQIP- Innovation Meet-2013, Institute of Chemical Technology

119	Engineering ligands for reactive separations, V.G. Gaikar	Indo-US symposium, CHEMCON, Dec 2013
120	Innovation in Engineering Education, V.G. Gaikar	SVNIT, October 2014
121	Engineering Education and Innovation, V.G. Gaikar	SGGSIET, April 2014
122	Commercialization of Research, V.G. Gaikar	Amravati University, May 2014
123	Process Control Basics, V.G. Gaikar	UGC- NRC Refresher Course, ICT Mumbai, 30th May 2015
124	Molecular Simulation for dynamics of systems, V.G. Gaikar	Molecular Dynamics Workshop, ICT, 30th May 2015
125	Ideation and Innovation, V.G. Gaikar	Dr. Babasaheb Ambedkar Technological University, Lonere, 18th April 2015
126	Engineering Separations using Molecular Modeling as a Tool, V.G. Gaikar	Workshop on " Molecular Modelling", Aligarh Muslim University, 29th April 201
127	Innovation & Commercialization of Scientific Research, V.G. Gaikar	Lecture delivered for YASHADA Trainees, 19th March 2015, ICT, Mumbai
128	Process Intensification of Extraction of Bio-actives as Health Care Products using Hydrotropes and Microwave Irradiation, V.G. Gaikar	BioProcessing Conference, 17th Dec 2014, ICT, Mumbai
129	Innovation and Creativity, V.G. Gaikar	Bharat Oman Refineries Ltd., Bina, 13th March 2015
130	Emerging technology in reduction of organic and non-organic pollutant from petroleum refinery wastewater stream: A scope for commercialization, Nitin Somkuwar, Tushar S. Thorat, D. T. Gokak and Sanjay Bhargava , Virendra Saharan, A.B. Pandit and V. G. Gaikar	International Refining and Petrochemical Conference 2-4 June, 2015
131	Panel discussion, '*MAKE IN INDIA*: Challenges to Indian Chemical Industries	RSS-2015, Research Scholars' Symposium, 21st February, 2015, IIT Bombay
132	Molecular Simulation of Diffusion and Selective Complexation in Separation Processes, V. G. Gaikar, Meena Singh, Jyotsna Arora	DAE-BRNS Theme Meeting on Application of Molecular Modeling in Separation Processes, 16th January 2015, BARC, Mumbai

Events Organized(in last five years)

1. UGC-NRC Workshop in' Soft Matter: Characterization and Applications, June 2012
2. TEQIP –INNOVATION MEET, 25-26th September. 2013, Institute of Chemical Technology
3. Molecular Dynamics Workshop, 30th May 2015-30th June 2015, ICT

4. Basics of Molecular Dynamics Workshop, Dr. Babasaheb Ambedkar Technological University, 19-20th April 2015
5. DST sponsored SERC School, Advanced separation process", 22nd to 24th March 2007
6. 25th September TEQIP- Innovation Meet-2013, Institute of Chemical Technology
7. UGC-NRC workshop on "Soft Matter', ICT, 7th June 2012
8. UGC-NRC workshop on Molecular Modelling, June 2012, ICT