PROFORMA - 2

UNIVERSITY OF CALCUTTA

Re : Updating University Website

ACADEMIC DEPARTMENT

FACULTY ACADEMIC PROFILE/ CV

1. **Full name of the faculty member**:

Samit Kumar Ray……

2. **Designation**:

Professor ……

3. **Specialization** : Membrane and gel based separation…..
……...

4. **Passport size photograph** :

Please attach a digital passport size coloured photograph with the soft copy.

5. **Contact information** :

Please provide contact address, email, phone number (optional), etc. Dept of Polymer Science & Technology, UCST, University of Calcutta, 92, A.P.C Road, Kolkata-700009, mob: 9433484751,samitcu2@yahoo.co.in, dskrpoly@caluniv.ac.in

……

6. **Academic qualifications**:

Please mention here the degrees (graduation onward):M.Tech.(1992) Ph.D.(1997)

College/ university from which the degree was obtained	Abbreviation of the degree
Department of Chemical Engineering , Institute of Chemical Technology, Mumbai-400019 (UDCT)	Doctor of Philosophy (Technology) (1994-97)
University of Calcutta	Master of Technology (1992)

7. **Positions held/ holding:**

i) Rubber Technologist (1992-94, Industries), SRF for Ph.D. research (ICT, Mumbai 1994-97), Executive (Technology) (1997-2000, in Industry), ii) Lecturer (Dept of Polymer Science & Tech, CU , 2000-2004),iii) Sr Lecture (2004-2006), iv) Reader (2006-2009), v) Head of the Dept (2008-2010), vi) Associate Professor (2009-2012), vi) Professor (2012-till date), vii) Head of the Dept (2015 July-2017 June)

……..

……..

8. **Research interests**:

Please cite briefly the areas of research interests

- ……Synthesis of Functional and smart polymers, chelating resins with nano particles & its application for waste treatment and membrane based separation, modeling of experimental process data…….
- …….

9. **Research guidance** :

Number of researchers awarded M.Phil/ Ph.D degrees : **Ph.D awarded 9** (as single independent supervisor) , one degree awaiting……

Number of researchers pursuing M.Phil/ Ph.D : Ph.D-8. (6 registered, 5000 Ph.D. defense completed -1 (Ph.D.), M.Pil Nil……

10. **Projects :**

Completed projects : 5 (UGC-major, DST-SERC, CSIR, DBT, CU) major-1,

……..

……..

Current projects : CSIR-EMR II one detail given at the end

……..

……..

11. **Select list of publications**:

a) ***Journals:***

- ……International-(65-Elsevier, Wiley, ACS, Taylor Francis), 5 under review, List given below
- National Nil (**No publication** in any national journal or open access international journal, not peer reviewed or without any impact factor)……
- ……

b) ***Books/ book chapters :***

- ……two 1.(CRC press, Taylor & Francis), 2.Elsevier……
- ……

c) ***Conference/ seminar volumes***:

- ……..
- ……..

d) ***Other publications*** :

- ……..
- ……..

12. **Membership of Learned Societies**: Indian Institute of Chemical Engineer, Journal of Chemical Society, Indian Science Congress (Life member)

……
……

13. **Patents :**

……
……

14. **Invited lectures delivered :**

……
……

15. **Awards :** Best Ph.D. Thesis award in Technology/Engineering –UDCT (1998)

……
……

16. **Other notable activities** :

……
……

I have given several invited lectures in international and national seminars, workshops, other Universities, academy staff colleges (CU and colleges outside West Bengal), also worked as Associate Editor, Journal of Chemical Society, course coordinator in Academy staff college, CU, working as regular reviewer of international journals including Elsevier, RSC, ACS, Springer, Wiley, etc., , also involved in consultancy works of industries.

Samit Kumar Ray

Signature of the faculty member

Date:

Project

1)Studies on Bioseparations By Pervaporation Membranes-UGC-Major-2004 completed 2007

2) Synthesis of pervaporation membranes by asymmetric incorporation of nano size fillers-2012-CRNN, University of Calcutta completed 2014

3) Synthesis of Ceramic-Polymer Composite Membranes For Pervaporative Separation, DST-SERC
SR/S3/CE/056/2009 dtd 16.09.2009-Completed 2014

4) Studies on removal of toxic heavy metal ions from water using polymeric hydrogel, CSIR-EMR **22(0547) /11/EMR-II** , date **06.06.2011 –**Completed 2015

5) Study on pervaporative stripping of acetone, butanol and ethanol (ABE) for improved ABE fermentation DBT NO. BT/PR5757/PID/6/709/2012 completed 2018
6) Pervaporative Desulfurization of Gasoline by using novel polymer membranes" of Sanction number 22/0746/17/EMRII, dated 10/10/2017 -ongoing

List of Publication

Publication in International Journals

1) **Ray, S.K**., Sawant, S.B., Joshi, J.B. and Pangarkar, V.G,' Perstraction of Phenolic Compounds. from aqueous solution Using a Nonporous Membrane', *Separation Science and Technology*, **32(16)**, **1997**, 2669-2683 (**Publisher: Taylor Francis**
2) 2) **Ray, S.K**., Sawant, S.B., Joshi, J.B. and Pangarkar, V.G.'Dehydration of acetic acid by pervaporation', *J.Membr. Sci*., **138**, **1998**, 1-17 **(Publisher: Elsevier)**

3) **Samit K. Ray**, Sudhir B. Sawant, Jyestharaj B. Joshi, and Viswas G. Pangarkar 'Development of new synthetic membranes for separation of benzene-cyclohexane mixture by pervaporation-A

solubility parameter approach' *Ind.Eng.Chem.Res.*, **36**, **1997**, 5265-5276 (**Publisher: American chemical society)**

4) **Ray, S.K**., Sawant, S.B., Joshi, J.B. and Pangarkar V.G 'Methanol selective membranes for separation of Methanol-Ethylene glycol mixtures by pervaporation', *J. Membrane Science*', **154**, **1999**, 1-13 (**Publisher: Elsevier**)

5) **Samit K. Ray**, Sudhir B. Sawant and Viswas G. Pangarkar 'Separation of Methyl-tert-butyl alcohol (MTBE)-Methanol mixtures by pervaporation', *J.Appl.Poly. Sci.* ,**74**,2645-2659,**1999** (**Publisher: John Wiley**)

6) S. Ray and **S. K. Ray** "Dehydration Of Acetic Acid, Alcohols And Acetone By Pervaporation Using Acrylonitrile-Maleic Anhydride Co-Polymer Membrane". Sep. Sci and Technol. 40, **2005**, 1583-1596. **Publisher: Taylor Francis**

7) S. Ray and **S. K. Ray**; "Effect of copolymer type and composition on separation characteristics of pervaporation membranes - A case study with separation of acetone-water mixtures". J. Membr.Sci. 270, **2006**, 73-87 (**Publisher: Elsevier**)

8) S. Ray and **S. K. Ray;** "Separation of Organic Mixtures by Pervaporation using crosslinked Rubber Membranes". J. Membr. Sci. 270, **2006**, 132-145. (**Publisher: Elsevier**)

9) S. Ray and **S. K. Ray**; "Synthesis of highly Methanol Selective Membranes for Separation of Methyl tertiary butyl ether (MTBE) -Methanol Mixtures by Pervaporation" J. Membr.Sci. 278**(2006)**, 279-289 (**Publisher: Elsevier**)

10) S. Ray and **S. K. Ray**; "Permeation studies of Tetrahydrofuran-water mixtures by Pervaporation Experiments". Sep. and Purific. Technol. 50(**2006**), 156-160 (**Publisher: Elsevier**)

11)B.B.Konar, **S.K.Ray** and P.B.Konar, Studies On Interfacial Adhesion, Tensile And Thermal Characteristics In Blends Of Polystyrene / Novalac Resin ,J.Appl. Polymer Sci. Vol. 102, 4630–4636 (2006) **Publisher: John Wiley**)

12) S. Ray and **S. K. Ray**, "Synthesis of highly selective copolymer membranes and their application for the dehydration of tetrahydrofuran by pervaporation" J. Appl. Polym. Sci., Volume 103, Issue 2 , Pages 728 – 737, **2006 Publisher: John Wiley**)

13) S. Ray and **S. K. Ray**, "Separation of organic mixtures by pervaporation using crosslinked and filled rubber membranes" 'J. Membrane Sci.' 285,(**2006),** 108-119
(**Publisher: Elsevier**)

14) S. Ray and **S. K. Ray** Dehydration of DMF by pervaporation', *Ind. and Eng. Chem. Res.* **2006,**45,7210-7218 (**Publisher: American chemical society)**

15) S. Ray and **S. K. Ray**, "Dehydration of tetrahydrofuran (THF) by pervaporation using crosslinked copolymer membranes" *Chemical Engineering and Processing: Process Intensification* 47(**2008**) 1620-1630 (**Publisher: Elsevier**)

16) S. Ray, N.R.Singha and **S. K. Ray**, "Removal of tetrahydrofuran (THF) from water by pervaporation using homo and blend polymeric membranes", *Chemical Engineering Journal*, 149 **(2009)** 153–161 (**Publisher: Elsevier**)

17) N.R. Singha, S.Kar, **S.K.Ray**, Synthesis of chemically modified polyvinyl alcohol membranes for Dehydration of Dioxane by Pervaporation, *Sep. Sci. and technol.* 44: 422–446, **2009 Publisher: Taylor Francis**

18) N.R.Singha, S.Kar, S.Ray, **S.K.Ray**, Separation of Isopropyl alcohol-water mixtures by Pervaporation using crosslink IPN membranes, *Chemical Engineering and Processing: Process Intensification* 48 **(2009**) 1020–1029 (**Publisher: Elsevier**)

19) N.R. Singha, S.Kar, **S.K.Ray**, Synthesis of Novel polymeric membrane for separation of MTBE-methanol by Pervaporation, , *Sep. Sci. and technol*, 44: 1–21, **2009 Publisher: Taylor Francis**

20) N.R. Singha, T.K.Parya , **S.K.Ray,** Dehydration of 1,4-Dioxane By Pervaporation Using Filled and crosslinked Polyvinyl alcohol Membrane, *J. Membr. Sci.*, 340 (**2009**) 35–44 (**Publisher: Elsevier**)

21) N.R. Singha, S.B. Kuila, Paramita Das, **S.K.Ray**, 'Separation of toluene–methanol mixtures by pervaporation using crosslink IPN membranes', *Chemical Engineering and Processing: Process Intensification* 48 (**2009**) 1560–1565 (**Publisher: Elsevier**)

22) B.B.Konar, S.K.Ray, T.K.Parya, Study on the effect of nano & active particles of aluminum on natural rubber-alumina composites in presence of epoxides natural rubber as compatibiliser, *J. Macromol. Sc. Part A Pure & Applied Chem* in press(**Taylor & Francis).2010**

23) N.R. Singha, **S.K.Ray**, Separation of toluene-methanol mixtures by Pervaporation using semi-IPN polymer membranes, Sep. Sci. and technol,, 45: 2298–2307, **2010 Publisher: Taylor Francis**

24) N.R.Singha, , S.Ray, **S.K.Ray**, Removal of pyridine from water by Pervaporation using filled SBR, membranes Journal of Applied Polymer Science, 121, **2011**, 1330–1334 **Publisher: John Wiley**)

25) S.B. Kuila, **S.K. Ray**, Paramita Das, N.R. Singha**,** Synthesis of full interpenetrating network membranes of poly(acrylic acid-co-acrylamide) in the matrix of polyvinyl alcohol for dehydration of ethylene glycol by pervaporation, *Chemical Engineering and Processing: Process Intensification* 50(4) (**2011**) 391-403 (**Publisher: Elsevier**)

26) Paramita Das, **S.K. Ray**, S.B. Kuila, H.S. Samanta, N.R. Singha, Systematic choice of crosslinker and filler for pervaporation membrane –A case study with dehydration of isopropyl alcohol-water mixtures by polyvinyl alcohol membranes, **Sep.&Purif. Tech.** 81 (**2011**) 159–173 (**Publisher: Elsevier**)

27) S.B. Kuila , **S.K. Ray**, Dehydration of acetic acid by pervaporation using filled IPN membranes, **Sep.&Purif. Tech**., 81 (**2011**) 295–306 (**Publisher: Elsevier**)

28) Bidyadhar Mandal,, **Samit Kumar Ray**, Ruma Bhattacharyya, Synthesis of Full and Semiinterpenetrating Hydrogel from Polyvinyl Alcohol and Poly (acrylic

Acid-co-Hydroxyethylmethacrylate) Copolymer: Study of Swelling Behavior, Network Parameters, and Dye Uptake Properties, **Journal of Applied Polymer Science** 124,(**2012**)2250–2268**Publisher: John Wiley**)

29) N.R.Singha, **S.K.Ray**, Removal of Pyridine From Water By Pervaporation Using Crosslinked And Filled Natural Rubber Membranes, **Journal of Applied Polymer Science** 124 (**2012**) 99–107 **(Publisher: John Wiley**)

30) H. S. Samanta, **S..K.Ray** ,Paramita Das, N. R. Singha,, Separation of acid-water mixtures by pervaporation using nano particle filled mixed matrix copolymer membranes, **Journal of Chemical Technology and Biotechnology** 87(**2012**)608–622

(Publisher: John Wiley)

31) S.B.Kuila, **S.K.Ray**, Sorption and Permeation studies of Tetrahydrofuran -water mixtures using Full Interpenetrating Network membranes, **Sep.&Purif. Tech**. 89 (**2012**) 39–50 (**Publisher: Elsevier**)

32) B.Mandal, S.K. Ray, Synthesis of interpenetrating network hydrogel from poly (acrylic acid-cohydroxyethyl methacrylate) and sodium alginate: Modeling and Kinetics study for removal of synthetic dyes from water, Carbohydrate Polymer 98(**2013**) 257-269. (Elsevier)

33) R.Bhattacharyya, S.K. Ray, Kinetic and equilibrium modeling for adsorption of textile des in aqueous solutions by carboxymethyl cellulose/ poly (acrylamide-co- hydroxyethyl ethacrylate) semi interpenetrating network hydrogel. Polymer Engineering & Science 53 11)(**2013**) 2439-2453. **Wiley**

34) R.Bhattacharyya, S. K.Ray, B. Mandal, A systematic method of synthesizing composite superabsorbent hydrogels from crosslink copolymer for removal of textile dyes from water, Journal of Industrial and Engineering Chemistry, 19 (**2013**) 1191–1203. (Elsevier)

35) Nayan Ranjan Singha, Paramita Das, Samit Kumar Ray, Recovery of pyridine from water by pervaporation using filled and crosslinked EPDM membranes, Journal of Industrial and Engineering Chemistry 19 (**2013**) 2034–2045. (Elsevier)

36) Paramita Das, S.K. Ray , Analysis of sorption and permeation of acetic acid–water mixtures through unfilled and filled blend membranes, Separation and Purification Technology 116 (**2013**) 433–447 (Elsevier).

37) S.B. Kuila , S.K. Ray, Separation of isopropyl alcohol–water mixtures by pervaporation using copolymer membrane: Analysis of sorption and permeation, Chemical engineering research and design 9 1 (**2 0 1 3**) 377–388 (Elsevier).

38) Sunil B. Kuila, Samit K. Ray, Sorption and Permeation of Acetic Acid–Water Mixtures by Pervaporation Using Copolymer Membrane, Polymer Engineering & science 53(5)(**2013**)1 073–1084 (wiley).

39) Himadri Sekhar Samanta, Samit Kumar Ray, Synthesis, characterization, swelling and drug release behavior of semi-interpenetrating network hydrogels of sodium alginate and polyacrylamide, Carbohydrate Polymers 99 (**2014**) 666– 678. (Elsevier)

40) S.B. Kuila , S.K. Ray , Dehydration of dioxane by pervaporation using filled blend membranes of polyvinyl alcohol and sodium alginate, Carbohydrate Polymers 101 (**2014**) 1154– 1165. (Elsevier)

41) Paramita Das, S.K. Ray, Synthesis and characterization of biopolymer based mixed matrix membranes for pervaporative dehydration, Carbohydrate Polymers, 103C (**2014**) 274-284, (Elsevier)

42) S.B. Kuila , S.K. Ray, Separation of benzene-cyclohexane mixtures by filled blend membranes of carboxymethyl cellulose and sodium alginate, Separation and Purification Technology, 123C **(2014)** 45-52(Elsevier)

43) Jayabrata Maity, Samit Kumar Ray, Enhanced adsorption of methyl violet and congo red by using semi and full IPN of polymethacrylic acid and chitosan, Carbohydrate Polymers, 104C (**2014**) 8-16 (Elsevier)

44) Himadri Sekhar Samanta, Samit Kumar Ray, Controlled release of tinidazole and theophylline from chitosan based composite hydrogels, 10.1016/j.carbpol.2014.01.097, Carbohydrate Polymers 106 (**2014**) 109-120 (Elsevier) .

45) Ruma .Bhattacharyya, Samit Kumar Ray, Enhanced adsorption of synthetic dyes from aqueous solution by a semi-interpenetrating network hydrogel based on starch, Journal of Industrial and Engineering Chemistry, 20(5) (**2014**)3714-3725 (Elsevier)

46) B.Mandal, S.K. Ray , Swelling, Diffusion, Network parameters and adsorption properties of IPN hydrogel of chitosan and acrylic copolymer, Materials Science and Engineering C, 44 (**2014**) 132–143 (Elsevier)

.47) Ruma .Bhattacharyya, Samit Kumar Ray, Micro- and nano-sized bentonite filled composite superabsorbents of chitosan and acrylic copolymer for removal of synthetic dyes from water, Applied Clay Science (Elsevier), 101 (**2014**) 510–520.

48) Ruma .Bhattacharyya, Samit Kumar Ray, Adsorption of industrial dyes by Semi-IPN hydrogels of Acrylic copolymers and sodium alginate, Journal of Industrial and Engineering Chemistry, 22 (**2015**) 92-102 (Elsevier)

49) Ruma .Bhattacharyya, Samit Kumar Ray, Removal of Congo red and Methyl violet from water using nano clay filled composite hydrogels of poly acrylic acid and polyethylene glycol , Chemical Engineering Journal, 260 (**2015**) 269–283 (Elsevier)

50) Himadri Sekhar Samanta, Samit Kumar Ray, Pervaporative recovery of acetone from water using mixed matrix blend membranes, Separation and Purification Technology, 143 (**2015**) 52–63 (Elsevier).

51) Himadri Sekhar Samanta, Samit Kumar Ray, Separation of ethanol from water by pervaporation using mixed matrix copolymer membranes, Separation and Purification Technology, 146 (**2015**) 176-186 (Elsevier)

52) Bidyadhar Mandal, Samit Kumar Ray , Synthesis, characterization, swelling and dye adsorption properties of starch incorporated acrylic gels, International Journal of Biological Macromolecules, 81 (**2015**) 847-857(Elsevier).

53) Bidyadhar Mandal, Samit Kumar Ray, Removal of safranine T and brilliant cresyl blue dyes from water by carboxy methyl cellulose incorporated acrylic hydrogels: Isotherms, kinetics and thermodynamic study, Journal of the Taiwan Institute of Chemical Engineers, 60 (**2016**)313-327 (Elsevier)

54) Paramita Das, Samit Kumar Ray, Pervaporative recovery of tetrahydrofuran from water with plasticized and filled polyvinylchloride membranes, Journal of Industrial and Engineering Chemistry, 34 (**2016**) 321-336 (Elsevier)

55) Paramita Das, Samit Kumar Ray, Synthesis of highly water selective copolymer membranes for pervaporative dehydration of acetonitrile, Journal of Membrane Science, 507 (**2016**) 81-89. (Elsevier)

56) Paramita Das, Samit Kumar Ray, Separation of toluene-methanol mixtures by pervaporation using filled elastomeric membranes, Journal of the Taiwan Institute of Chemical Engineers,64 (**2016**) 89-105 (Elsevier)

57) Jayabrata Maity, Samit Kumar Ray, Enhanced adsorption of Cr (VI) from water by guar gum based composite hydrogels, International Journal of Biological Macromolecules, 89 (**2016**) 246-255 (Elsevier)

58) Jayabrata Maity, Samit Kumar Ray, Removal of Cu (II) ion from water using sugar cane bagasse cellulose and gelatin based composite hydrogels, International Journal of Biological Macromolecules, 97 (**2017**) 238-248 (Elsevier)

59) Swastika Choudhury, Samit Kumar Ray, Filled copolymer membranes for pervaporative dehydration of ethanol-water mixture, Separation and Purification Technology, 179 **(2017)** 335-348 (Elsevier)

60) Jayabrata Maity and Samit Kumar Ray, Competitive Removal of Cu(II) and Cd(II) from Water Using a Biocomposite Hydrogel, *J. Phys. Chem. B,* **2017**, *121* (48), pp 10988–11001 (ACS)

61) Jayrata Maity, Samit Kumar Ray, Removal of Pb(II) from water using a bio-composite adsorbent-A systematic approach of optimizing synthesis and process parameters by response surface methodology, Journal of Environmental Management, 209 **(2018)** 112-125 (Elsevier)

62) Jayrata Maity, Samit Kumar Ray, Chitosan based nano composite adsorbent—Synthesis, characterization and application for adsorption of binary mixtures of Pb(II) and Cd(II) from water, Carbohydrate Polymers, 182 **(2018)** 159-171. (Elsevier)

63) Swastika Choudhury, Efficient removal of cationic dye mixtures from water using a bio-composite adsorbent optimized with response surface methodology, Carbohydrate Polymers, 182 **(2018)** 159-171. (Elsevier)

64) Amritanshu Banerjee, Samit Kumar Ray, PVA modified filled copolymer membranes for pervaporative dehydration of acetic acid-systematic optimization of synthesis and process parameters with response surface methodology, Journal of Membrane Science , 549 **(2018)** 84-100. (Elsevier)

65) Swastika Choudhury, Samit Kumar Ray, Analysis of Sorption and Permeation of Acetonitrile–Water Mixtures through Nanoclay-Filled Copolymer Membranes, *Ind. Eng. Chem. Res.*, **2019**, *58* (11), pp 4581–4597 (ACS)
Paper under review/revision submitted-4

* 1st author (paper 1-5), 2nd author (paper 11, 22), corresponding author in all other papers

Book Chapter

1.PERVAPORATION: THEORY, PRACTICE AND APPLICATIONS IN THE CHEMICAL AND ALLIED INDUSTRIES in Handbook of Membrane Separations *Chemical, Pharmaceutical, Food ,and Biotechnological Applications*, *Editor* Anil K. Pabby Syed S. H. Rizvi, Ana Maria Sastre, CRC Press Taylor & Francis , Boca Raton London New York

2. Samit Kumar Ray, Amritanshu Banerjee, Swastika Choudhury, Debapriya Pyne, Nano metal and metal oxide based polymer nanocomposite membranes for pervaporation in Polymer Nano composite membranes for Pervaporation (Elsevier) in press **(2019)**

Some of the papers based on Conference/workshop/invited lectures are pasted below

1.Development of ultrafiltration membranes of various molecular weights cut off (MWCO) and its application in water treatment (paper no. MAE 19, page-91), Matcon 2001, (2nd March, 2001, Dept of Applied chemistry
Cochin Univ., Kerala

2. Studies on synthesis of methanol selective polymeric membranes and its application in sorption and permeation of methanol-ethylene glycol mixtures, International symposium on material chemistry, , 4-8 Dec. 2006, BARC, Mumbai

3. Synthesis of water treatment polymer (paper no.AEC (OP)-34, page-D13, Annual meeting of Indian Chem.Soc. (AEC), Indian Chemical Society

4. Preparation of Chloroprene based Cold adhesive (paper no.IAC (OP)-10,page-E4, Annual meeting of Indian Chem.Soc. (AEC)
5. Selection of polymers for making pervaporation membranes (paper no. TSM-063, PAGE-46), Annual session
of IICE (CHEMCON-2001), Indian institute of Chemical Engineer,Chennai

6. Dehydration of alcohols by Pervaporation (P.1.2), Frontier of Polymer Science & Engineering Macro-2002, IIT Kharagpur

7. Synthesis of Blend polymeric membranes for VOC removal from aqueous waste ICEM, International conference on environmental management (ICEM) Hyderabad 28-30 Oct., 2005

8. Water treatment by polymeric membranes-a case study with removal of acetone from water by pervaporation, International congress of chemistry and environment, ICCE-2005,Indore

9. Dehydration of tetrahydrofuran (THF) by highly selective pervaporation membrane, Chemcon-2005

10. Pervaporative bioseparation by polymeric membrane, 13 th state sci.& Tech congress 28th Feb. to 1st March 2006,

12. Studies on synthesis of methanol selective polymeric membranes and its application in sorption and permeation of methanol-ethylene glycol, Chemical Engineering & Environment:,
13. Separation of benzene-cyclohexane mixtures by pervaporation, Chemcon 2006

14. Empowering business entities through IPR, International intellectual property rights (IPR) conference
8-9 Jan. 2009, Hotel Taj Bengal Kolkata

15. Synthesis and swelling properties of hydrogel based on Chitosan and poly(methacrylic acid) semi interpenetrating polymer network,Paper No. MP16 page 144 (material science)

16. Pollution from plastics and its prevention, Workshop, Govt college of Eng. &Ceramic Tech, Kolkata TEQIP, 15/9/07, invited talk
17. Solid waste management, Dept of Chemical Technology, Invited talk

18. Micro and nano particle filled mixed matrix membranes for pervaporative separation, International Conference on Nanotechnology (ICNT - 2013), invited lecture

19. Composite membranes For Pervaporative Separation, International Conference on Composites and Nanocomposites (ICNC – 2011) invited lectures

20. Membrane separation and its application in Industry, Membrane-2007, invited lecture