

## ALKA SHUKLA

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**Professor,  
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### **SUMMARY OF QUALIFICATIONS**

- Ten years experience of research in Analytical and Environmental Chemistry
- Eighteen years experience teaching various chemistry courses at Southeast College and other campuses of Houston Community College System
- Co-author in fourteen publications in international journals
- Presented ten technical presentations/posters in International Conference
- Listed in **American Men and Women of Science ,Who's Who in American Woman, Who's who in America**
- Submit proposals
- Organized and chaired technical sessions at American Chemical Society's National meetings, Pittsburgh and Boston(1997, 1998)
- Write chapter in book, "Industrial Applications of Microemulsions", C. Solans, ed., Marcel-Dekker, 1997.
- Organize Chemistry Magic Show at Southeast College, 2002.

### **POSITIONS**

1992-present .Chemistry Professor, Southeast College, Houston, TX  
1990-1992 . Research Assistant, Lamar University, Beaumont, TX

### **EXPERIENCE**

#### ***Teaching Experience***

Taught various chemistry courses at Southeast College and other campuses of Houston Community College System. Conduct laboratories with prelab briefing. Review textbooks for adoptions. Set up Chemistry Virtual Lab. "Labworks" at Southeast and use it to teach automated measurements systems to chemistry students.

#### ***Research Experience***

Experienced in disposal and detoxification of toxic waste using Photochemical/photomicroelectrochemical techniques as well as adsorptive techniques using sawdust and other waste material. These works have resulted in several publications. Have presented some of this work in various American Chemical Society's national or special meetings. Have organized and chaired technical session at several American Chemical Society's meetings.

### ***Others***

Participate in various college committees such as discipline committee, attend Systemwide Inservice, etc. Judge science fair, attend professional workshops (HP, Perkin Elmer), Computer workshop (WebCT, computer workshop). Attend annual faculty conference at University of Houston. Participate in National and International Conferences (American Chemical Society's National meetings, Welch Foundation)

### **EDUCATION**

M.S. in Chemistry, Lamar University, Beaumont, TX 1990

M.Sc. in Bioinorganic Chemistry, University of Indore, India, 1980

### **Publications and Professional Presentations**

List attached

### **Participation in Workshops and Presentations**

1. Attend, "Integrating the Activities into Your Curriculum", American Chemical Society's National Meeting, New Orleans, December 2000.
2. Perkin Elmer Workshop, "Inductively Coupled Plasma," Houston, Feb. 24<sup>th</sup> 2000
3. Various presentations related to chemical education at American Chemical Society's National Meeting at San Diego, 2001.
4. Computer Workshop in Northwest College, West Loop Campus, August 99
5. Hewlett Packard Workshop, "Everything You Want to Know About Chromatography," Houston, TX Oct. 7<sup>th</sup>, 99.
6. Prentice Hall Education Workshop, Marriott Near Galleria, Houston, TX, Fall 1999
7. Attend Welch Foundation Conference, Oct. 2001 till today.

### **Other**

1. Judge Science Fair, Pearland High School, Feb. 7, 2002
2. Attended an International Conference, "International Conference in Process Education," Stonybrook, New York, June 99.
3. Prepared an exciting demonstration for Southeast College's Gateway to Success event on Wed. April 18, 2001.

4. Judge in I-Sweep organized in 2011-2014. I-Sweep Olympiad is an International Sustainable World (Energy, Engineering and Environment) Project. Students from more than seventy countries participate in the competition. Students participating in this Olympiad are the winners of their national competitions.

## **PUBLICATIONS**

### **Environmental Chemistry**

1. A. Solidification/Stabilization Study for the Disposal of Pentachlorophenol, J. Hazard. Mat., 22, 254 (1989). {with K. C. Lee and S. Shukla}
2. Photodegradation, Biodegradation and Chemical Fixation of Pentachlorophenol, R&D Proceedings of Hazardous Material Control Research Institute, pp. 250-254 (1991). { with A. Nguyen, S. Shukla and S. N. Shukla}
3. Photomicroelectrochemical Destruction of Complexed and Free Cyanide", Proceedings of A.I.M.M.G.M., Mexico (1991). {with S. Shukla, J. R. Parga Torres and S. N. Shukla}
4. A Solidification/Stabilization Study for Disposal of Pentachlorophenol", J. Hazard. Mat., 30, 317-31 (1992). {S. Shukla, K. C. Lee, T. M. Aminabhavi and R. H. Balundgi}
5. Chemical Degradation of Pentachlorophenol," R&D Proceedings of Hazardous Material Control Research Institute, pp. 140-143 (1992). {with S. Shukla and M. S. Chandrasekharaiah}
6. Use of Maple Sawdust for Removal of Copper from Wastewater, J. Haz. Mat. B80, (2000) {with S. Shukla, K. L. Dorris, Bin Yu, Y. Zhang}
7. Use of Maple Sawdust for Removal of Lead from Wastewater, J. Haz. Mat. B84, 83-94 (2001) {with S. Shukla, K. L. Dorris, Bin Yu, Y. Zhang}
8. The Use of Sawdust for Removal of Unwanted Material from Wastewaters, J. Haz. Mat. 95, 137-152 (2002){with S. Shukla, Y. Zhang, Dr. J. L. Margrave}
9. Identification of Microorganism for Biodegradation of Pentachlorophenol, Accepted for Publication in Res. J. Chem. Env., 7(2003).
10. Adsorption of Chromium from Aqueous Solutions by Maple Sawdust, J. Haz. Mat. {with S. Shukla, K. L. Dorris, Li Yu, Y. Zhang}, 100,53-63(2003).

### **Analytical Chemistry (Microheterogeneous Media, Calorimetry, Phase Solubility Analysis)**

11. Analytical Applications of Microemulsions", in Industrial Applications of Microemulsions, C. Solans and H. Kuneida (eds.), Marcel Dekker, Inc., 1996. { with A. Shukla and J. L. Margrave}

### **Computer (Numerical Computations and Errors)**

12. On Scientific Computing, *Intell. Compt. Inst.*, 3, 19 (1985). {with S. Shukla}
13. Formulation of Mathematical Expressions for Minimizing Inaccuracies in Computations, *J. Chem. Educ.*, 63, 72 (1986). {with S. Shukla}
14. "Artificial Intelligence in Chemistry", *Amer. Lab.*, 20, 92 (1988). An invited paper. {with S. Shukla}

### **Papers in Preparation**

15. Use of Partially Converted Crabshells for Removal of Lead from Wastewater
16. Use of Partially Converted Crabshells for Removal of Copper from Wastewater
17. Comparison of Sawdust and Crabshells for the uptake of metal ions
18. Photodegradation of Pentachlorophenol Solubilized in Microheterogenous Media.

### **Professional Presentations**

1. Analytical Determinations Using Organized Media {Presented at American Chemical Society's Southwestern Regional Meeting, Houston, TX, November, 1986}.
2. Chaired an Analytical Chemistry Session {at American Chemical Society's Southwestern Regional Meeting, Houston, TX, November, 1986}.
3. Artificial Intelligence in Chemistry: Development of Systematic Qualitative Analysis Scheme on a Computer {Presented at American Chemical Society's National Meeting, Toronto, Canada, June, 1988}.
4. Analysis of Water-Insoluble Compounds Utilizing O/W Microemulsions {Presented at American Chemical Society's National Meeting, New Orleans, September, 1987}.
5. Pitfalls of Linear Regression Analysis {Presented at American Chemical Society's National Meeting, Toronto, Canada, June, 1988}.
6. Construction of a Computer-Interfaced Calorimeter and its Use in Determinations of Water-Insoluble Compounds in O/W Microemulsions.

{Presented at American Chemical Society's National Meeting, Los Angeles, CA., September, 1988}.

7. Study of Solidification/Stabilization Process for Disposal of Pentachlorophenol {Presented at American Chemical Society's Southwest Regional Meeting, Corpus Christi, December, 1988}.
8. Study of Solidification/Stabilization Process for Disposal of Pentachlorophenol {Poster presentation at GCHSRC Symposium on Hazardous Waste, Beaumont, TX, February, 1989}.
9. Study of Solidification/Stabilization Process for Disposal of Pentachlorophenol {Presented at American Chemical Society's I&E C Division Symposium, Atlanta, GA, April 1989}.
10. Disposal and Detoxification of Halogenated Compounds {Presented at American Chemical Society's National Meeting, Miami beach, FL, September, 1989}.
11. Photodegradation, Biodegradation and Chemical Fixation of Pentachlorophenol {Presentation at Hazardous Material Control Research Institute's (HMCRI) R&D Conference, Anaheim, CA, February, 1991}.
12. An Overview of the Applications of Photochemical, Photomicroelectrochemical, Biochemical and Chemical Fixation (Based on Portland Cement) for Treatment of Pentachlorophenol (PCP) and Cyanide Waste {Presented at Ecole Normale Supérieure de Cachan, Cachan, France, December 1991}.
13. Photodegradation, Biodegradation and Chemical Fixation of Pentachlorophenol. Presented at Laboratoire D'Electrochimie {Presented at Ecole Nationale Supérieure de Chimie de Paris, Paris, December 1991}.
14. Chemical Degradation of Pentachlorophenol {Presented at the R&D Meeting of Hazardous Material Control Research Institute (HMCRI) at New Orleans, February, 1992}.
15. Analytical Applications of Organized Media {Presented at 1992 Gulf Coast Conference, Galveston, TX, Sept, 1992}.
16. Analytical Applications of Microemulsions {Presented as a Keynote Address at the International Conference on Industrial Applications of Microemulsions, New Delhi, India, 1993}.

17. Chaired a Session {at ACS' I&EC Division Meeting, "Emerging Technologies in Hazardous Waste Management, Atlanta, GA, Sept. 1994 }.
18. Photochemical and Photomicroelectrochemical Degradation of Pentachlorophenol Solubilized in Microheterogeneous Media {at ACS' I&EC Division Meeting, "Emerging Technologies in Hazardous Waste Management, Atlanta, GA, Sept. 1995}.
19. The Use of Modified Sawdust for the Removal of Lead and Copper from Wastewater {at ACS' I&EC Division Meeting, "Emerging Technologies in Hazardous Waste Management, Birmingham, AL, Sept. 1996}.
20. Chitosan and Crabshells for the Treatment of Wastewater Containing Metal Ions {at ACS' I&EC Division Meeting, "Emerging Technologies in Hazardous Waste Management, Birmingham, AL, Sept. 1996}.
21. Lo Cost Lo Tech Methods for Removal of Metal Ions from Wastewater, presented at North American Chemical Congress, Cancun Mexico, 11/1997.
22. The Use of Colloidal Media for Management of Hazardous Wastes, presented at North American Chemical Congress, Cancun Mexico, Nov. 1997.
23. Photolytic methods for Degradation of Cyanides and Pentachlorophenol, presented at American Chemical Society's Conference "Emerging Technologies for the Management of Hazardous Wastes IX," Pittsburgh, PA, Sept., 1997.
24. Use of Water Hyacinth for Removal of Metal ions from Wastewater", presented at American Chemical Society's Conference "Emerging Technologies for the Management of Hazardous Wastes IX," Pittsburgh, PA, Sept., 1997.
25. "Use of Waste byproducts for the solution of Environmental Problems, presented at American Chemical Society's Conference "Emerging Technologies for the Management of Hazardous Wastes IX," Pittsburgh, PA, Sept., 1997.
26. Use of Sodiumdodecyl Sulfate and Cetyltrimethylammonium bromide for Solubilization and Degradation of Chlorinated Phenols, presented at American Chemical Society's National Conference Boston, MA, Aug. 1998
27. Use of Maple Sawdust for Uptake of Chromium and Nickel, at Southwest regional meeting of American Chemical Society, December 2000
28. The Adsorption of Nickel and Chromium from Wastewater by Sawdust, ACS National Meeting in New Orleans, Oct. 2000.

29. Recovery and Degradation of Complexed Cyanide, at the ACS National Meeting in San Diego, April 2001.
30. Prepared a very exciting demonstration for Southeast College's Gateway to Success event on Wed. April 18, 2001.
31. The Role of Guided Inquiry and Microscale Chemistry in Green Chemistry on June 24<sup>th</sup> at 12<sup>th</sup> Annual Green Chemistry & Engineering Conference, Washington, DC, 2008.
32. Water Purification Using Simplified Solar Distillation Process, June 24<sup>th</sup> at 12<sup>th</sup> Annual Green Chemistry & Engineering Conference, Washington, DC, 2008.
33. GCE304 titled Nutritional control of toxic metals in drinking water with onion, garlic and Physillium husk, has been accepted for oral presentation at the 15th Annual Green Chemistry & Engineering Conference + 5th International Conference on Green and Sustainable Chemistry. I am a co-Author in this presentation the conference was held June 21-23, 2011 at the Capital Hilton in Washington, DC.