

## CURRICULUM VITAE



### **Dr. LAKSHMI NARAYANA SUVARAPU**

Research Professor  
Air Quality Monitoring Laboratory  
School of Environmental Engineering  
Yeungnam University

214-1 Dae-dong Gyeongsan-si,  
Gyeongsangbuk-do - 712-749,  
South Korea  
Phone: +82-53-810-3793  
E-mail: [suvarapu@gmail.com](mailto:suvarapu@gmail.com)

---

### PERSONAL INFORMATION

Date of Birth	:	28-December-1979
Place of Birth	:	Tirupati, Andhra Pradesh, India
Marital Status	:	Married
Communication Address	:	214-1 Dae-dong Gyeongsan-si, Gyeongsangbuk-do - 712-749, South Korea Phone: +82-10-8722-2402
Permanent Address	:	20-2-495/A4, Korlagunta Tirupati – 517 501, Chittoor (District) Andhra Pradesh India Phone: +91-9550471279

## EDUCATION

Ph.D., Chemistry, **2009**, Sri Venkateswara University, Tirupati, India.  
M.Sc., Inorganic Chemistry, **2002, Gold medalist (74.41 %)** Sri Venkateswara University, Tirupati, India.  
B.Sc., Chemistry, Physics, Zoology, **2000, Branch First (71.27 %)** Sri Venkateswara University, Tirupati, India.  
(10+2), Chemistry, Physics, Zoology, Botany, **1997, College first (82.1 %)**, A.G.S. Junior College, Tirupati, India  
S.S.C. Science, Mathematics **1995, School first (84.5 %)**, T.P.P.M.H.School, Tirupati, India

## RESEARCH EXPERIENCE

**2011- Present**, Research Professor (Advisor: Prof Sung-Ok Baek)  
**Air Quality Monitoring Laboratory, School of Environmental Engineering**  
**Yeungnam University, South Korea.**

- Determination of the concentration of Polycyclic Aromatic Hydrocarbons (PAHs) in Ambient air by using **GC/MS** and evaluates the **cancer risk** of individual PAH
- Determination of the Volatile Organic Compounds in Ambient air by **HPLC**
- Determination of heavy metals in ambient air with **ICP-MS**

**2009-2010**, Post Doctoral Research Associate (Advisor: Prof Inseong Hwang)  
Environmental Remediation Lab,  
Pusan National University  
South Korea

- Stabilization of heavy metals in mine tailings by using different amendments like red mud, fly ash, phosphate fertilizers, and lime
- Developed the mechanism of binding between phosphate fertilizers and to the heavy metals
- Mostly concentrated on toxic heavy metals like Cd, Cr, Ni and Pb
- Heavy metal concentrations were analyzed by using **ICP-MS**

**2004-2009**, Doctoral Research, **Senior Research Fellow**  
Sri Venkateswara University, Tirupati, India (Thesis Advisor: Prof A. Varada Reddy)

- Worked on the determination of Heavy metals in Environmental matrices by using organic reagents such as thiosemicarbazones and hydrazones as chelating agents

- Synthesized a new organic chelating agent Benzyloxybenzaldehyde thiosemicarbazone for first time and used for the chelation with metal ions, such as Pd(II) and Cu(II) in different environmental matrices
- During this work the concentration of the heavy metals were measured by using **UV-Visible spectrophotometer and Atomic Absorption Spectrophotometer**

## **CURRENT RESEARCH AREAS OF INTEREST**

- Determination of Hazardous Air Pollutants (HAPs) in ambient air and analysis of their concentrations by using various analytical instruments such as **GC/MS, HPLC, and ICP-MS**

## **TECHNICAL SKILLS**

- Experience with various instruments such as **GC/MS, HPLC, and ICP-MS**
- In-depth knowledge about the concentrations of PAHs in Asian countries
- Experience with the **UV-Visible spectrophotometer and Atomic Absorption Spectrophotometer**

## **COMPUTER SKILLS**

- Operating Systems Known: **MSDOS, WINDOWS**
- Handled many graphical packages like **Chemdraw, Origin and Excel**

## **AWARDS AND FELLOWSHIPS**

- **Awarded YOUNG SCIENTIST PROJECT from Department of Science & Technology (DST), India (2012)**
- Received **Gold Medal (2003)**, from the Governor of Andhra Pradesh for securing first rank in M.Sc., Inorganic Chemistry at Sri Venkateswara University, Tirupati, India
- Awarded **Senior Research Fellowship (2008)**, from the Council of Scientific and Industrial Research (CSIR), New Delhi, India
- Awarded **Junior Scientist of the Year (2011) with Gold medal** by the National Environmental Science Academy (NESA), New Delhi, India

## PROFESSIONAL ACTIVITIES/MEMBERSHIPS

- Life Member of the Indian Society of Analytical Scientists, India (From 2007)
- Life Member of the National Environmental Science Academy, New Delhi, India (From 2011)
- Member of the Korean Society for Atmospheric Environment (KOSAE), (From 2011)
- Part of researchers in redmud.org

## TEACHING EXPERIENCE

- Teaching Environmental experimental methods and Environmental Risk Assessment to the graduate students in Yeungnam University from March – 2011- present
- Taught Inorganic and Analytical Chemistry topics to the Graduate students at Sri Venkateswara University, Tirupati, India during Ph.D. tenure (2004-2009)
- Taught Inorganic, Organic and Physical Chemistry topics to the undergraduate students in GATE degree college, Tirupati, India during 2002-2004

## LIST OF REFEREED PUBLICATIONS IN INTERNATIONAL JOURNALS

1. Monitoring of Volatile Organic Compounds at Gyeongju: A Historical and Tourist place in South Korea. Young-Kyo Seo, **Lakshmi Narayana Suvarapu**, Sung-Ok Baek. *Asian Journal of Chemistry* 26(8), 2493-2499, **2014**.
2. Speciation and determination of mercury by various analytical techniques. **Lakshmi Narayana Suvarapu**, Young Kyo Seo, Sung-Ok Baek. *Reviews in Analytical Chemistry* 32(3), 225-245, **2013**.
3. Characterization of Volatile Organic Compounds at a Heavy-Traffic Site in Daegu, South Korea. Young-Kyo Seo, **Lakshmi Narayana Suvarapu**, Sung-Ok Baek. *Asian Journal of Chemistry* 25(5), 2912-2922, **2013**.
4. A Review on the Atmospheric Concentrations of Polycyclic Aromatic Hydrocarbons (PAHs) in Asia since 2000-Part I: Data from Developed Countries. **Lakshmi Narayana Suvarapu**, Young-Kyo Seo, Beom-Seok Lee, Sung-Ok Baek. *Asian Journal of Atmospheric Environment* 6(3), 147-168, **2012**.
5. A Review on the Atmospheric Concentrations of Polycyclic Aromatic Hydrocarbons (PAHs) in Asia since 2000-Part II: Data from Developing Countries. **Lakshmi Narayana Suvarapu**, Young-Kyo Seo, Yoon-Chang Cha, Sung-Ok Baek. *Asian Journal of Atmospheric Environment* 6(3), 169-191, **2012**.

6. Concentrations of Polycyclic Aromatic Hydrocarbons in Indian Atmosphere during 1999-2011. **Lakshmi Narayana Suvarapu**, Young-Kyo Seo, Sung-Ok Baek. *Asian Journal of Chemistry* 24(12), 5463-5465, **2012**.
7. Spectrophotometric determination of titanium(IV) by using 3,4-Dihydroxybenzaldehydeisonicotinoylhydrazone(3,4-DHBINH) as a chromogenic agent. **Lakshmi Narayana Suvarapu**, Young-Kyo Seo, Sung Ok Baek. *Chemical Science Transactions* 1(1), 171-179, **2012**.
8. Review on Analytical and biological applications of Hydrazones and their metal complexes. **Lakshmi Narayana Suvarapu**, Young-Kyo Seo, Sung-Ok Baek, Varada Reddy A. *E-Journal of Chemistry* 9(3), 1288-1304, **2012**.
9. A Critical Review on Analytical and Biological Applications of Thio- and Phenyl thiosemicarbazones. **Lakshmi Narayana Suvarapu**, Adinarayana Reddy Somala, Janardhan Reddy Koduru, Sung Ok Baek, Varada Reddy Ammireddy. *Asian Journal of Chemistry* 24(5), 1889-1898, **2012**.
10. Spectral Characterization and Antibacterial Activities of Benzyloxybenzaldehydethiosemicarbazone, 3,4-Dihydroxybenzaldehydeisonicotinoylhydrazone and their transitional metal complexes. **S. Lakshmi Narayana**, A. Varada Reddy, G. Satheesh Kumar, Sung Ok Baek. *E-Journal of Chemistry* 8(4), 1848-1858, **2011**.
11. Determination of Traces of Pd(II) in Spiked Samples by Using 3,4-Dihydroxybenzaldehydeisonicotinoylhydrazone as a Chelating Agent with UV Visible Spectrophotometer. **S. Lakshmi Narayana**, C. Ramachandraiah, A. Varada Reddy, Dongyeun Lee, Jaesool Shim. *E-Journal of Chemistry* 8(1), 217-225, **2011**.
12. A Simple and Highly Sensitive Spectrophotometric Determination of chromium (VI) in Food by using 3,4-Dihydroxybenzaldehydeisonicotinoylhydrazone(3,4-DHBINH). **S. Lakshmi Narayana**, S. Adi Narayana Reddy, Y.Subbarao, Hwang Inseong, A. Varada Reddy. *Food Chemistry* 121, 1269–1273, **2010**.
13. A Sensitive, Selective New Analytical Reagent, 2,6-Diacetylpyridinebis-4-phenyl-3-thiosemicarbazone for Extractive Spectrophotometric determination of molybdenum(VI) in Food Samples. S. Adinarayana Reddy, K. Janardhan Reddy, **S. Lakshmi Narayana**, Y. Subba Rao, C. Ramachandraiah and A. Varada Reddy. *Food Analytical Methods* 2, 141-148, **2009**.
14. Spectrophotometric Studies of Micro Amounts of vanadium(V) in Environmental and Alloy Samples by Using 3,4-Dihydroxybenzaldehydeisonicotinoylhydrazone (3,4-DHBINH). **S. Lakshmi Narayana**, K. Janardhan Reddy, S. Adi Narayana Reddy, Y. Sarala and A.Varada Reddy. *Environmental Monitoring and Assessment* 144, 341-349, **2008**.
15. Benzyloxybenzaldehydethiosemicarbazone: Extractive Spectrophotometric Reagent for the Determination of copper(II) in Food and Water Samples. **S. Lakshmi Narayana**, K.

Janardhan Reddy, S. Adinarayana Reddy, Y.Sarala and A.Varada Reddy. *Food Analytical Methods* 1, 293-299, **2008**.

16. Development of Highly Sensitive Extractive Spectrophotometric Method for the Determination of nickel(II) from Environmental Matrices using N-ethyl-3-carbazolecarboxaldehyde-3-thiosemicarbazone. C. Ramachandraiah, J. R. Kumar, K. Janardhan Reddy, **S. Lakshmi Narayana** and A.V. Reddy. *Journal of Environmental Management* 88, 729-736, **2008**.
17. Analytical Applications of 2,6-Diacetylpyridinebis-4-phenyl-3-thiosemicarbazone and Determination of copper(II) in Food Samples. S. Adinarayana Reddy, K. Janardhan Reddy, **S. Lakshmi Narayana** and A. Varada Reddy. *Food Chemistry* 109(3), 654-659, **2008**.
18. Extractive Spectrophotometric Determination of Trace Amounts of cadmium (II) in Medicinal Leaves and Environmental Samples Using Benzildithiosemicarbazone (BDTSC). S. Adinarayana Reddy, K. Janardhan Reddy, **S. Lakshmi Narayana**, D. Lalitha Priya, Y.Subba Rao and A. Varada Reddy. *Journal of Hazardous Materials* 152, 903- 909, **2008**.
19. Synthesis of New Reagent 2,6-Diacetylpyridine bis-4-phenyl-3-thiosemicarbazone(2,6-DAP BPTSC): Selective, Sensitive and Extractive Spectrophotometric determination of cobalt(II) in Vegetables, Soil, Pharmaceutical and Alloy Samples. S. Adinarayana Reddy, K. Jana rdhan Reddy, **S. Lakshmi Narayana**, Y. Sarala and A.Varada Reddy. *Journal of the Chinese Chemical Society* 52(2), 326-334, **2008**.
20. Synthesis of New Reagent Benzyloxybenzaldehydethiosemicarbazone (BBTSC): Selective, Sensitive and Extractive spectrophotometric determination of Pd(II) in water samples and synthetic mixtures. **S. Lakshmi Narayana**, K.J. Reddy, S.A. Reddy, A.V. Reddy. *Journal of the Chinese Chemical Society* 54, 1233-1241, **2007**.

## **PUBLICATIONS IN INTERNATIONAL CONFERENCES PROCEEDINGS**

1. The Atmospheric Concentrations of Polycyclic Aromatic Hydrocarbons (PAH) in Asian Countries. **Lakshmi Narayana Suvarapu**, Young Kyo Seo, Sung-Ok Baek. The 35<sup>th</sup> International Symposium on Environmental Issues, pp 149-161. Current Status and Prospect of Sustainable Environmental Technology. Gyeongbuk Techno Park, Gyeongsan, **South Korea**. 3<sup>rd</sup> June, 2013. (Invited Speaker).
2. A Review on Concentrations of Polycyclic Aromatic Hydrocarbons (PAHs) in Indian Atmosphere during 1990-2011. **Lakshmi Narayana Suvarapu**, Yong-Kyo Seo, Sung-Ok Baek. International Conference on Global Trends in Pure and Applied Chemical Sciences, Organized by Asian Journal of Chemistry, Udaipur, India, March 4-5, **2012**.
3. Concentration of Polycyclic Aromatic Hydrocarbons (PAHs) in Ambient Air of Asian Countries. **Lakshmi Narayana Suvarapu**, Seo Young Kyo, Sung Ok Baek. Conference of

Korean Society for Atmospheric Environment. Pukyong National University, Busan, **South Korea**. October 26-27, **2011**.

4. Synthesis and spectral characterization of benzyloxybenzaldehydethiosemicarbazone (BBTSC): Biological activities of transitional metal complexes of BBTSC and 3,4-Dihydroxybenzaldehydeisonicotinoylhydrazone” **S. Lakshmi Narayana**, S. Adinarayana Reddy, K.Janardhan Reddy, Jaesool shim and A.Varada Reddy. The 20<sup>th</sup> International Conference on Physical Organic chemistry (ICPOC-20) Busan, **South Korea**, August 22-28, **2010**. The **IUPAC Conference**
5. Stabilization of heavy metals in mine tailings by using mono-potassium phosphate and natural fertilizer apatite. Jun-Young Ahn, **Lakshmi Narayana Suvarapu**, Kyung-yup Hwang, Inseong Hwang. The 2010 International Conference on Environmental Science and Development (CESD 2010), February 26-28, **2010, Singapore**.
6. Extractive separation and determination of metal ions in environmental and spiked samples by using organic reagents as chelating agents” **S. LAKSHMI NARAYANA**, Invited lecture International Symposium for clean process and energy, Kyungpook National University, Deagu, **South Korea**, April, **2009**
7. Stabilization of heavy metals in mine tailings by using different amendments. Lakshmi Narayana Suvarapu, Kyung-yup Hwang, Jun-Young Ahn, Inseong Hwang. 11<sup>th</sup> Cross Straits Symposium on Materials, Energy and Environmental Sciences. Pusan National University, **South Korea**, November 12-13, **2009**.