

CURRICULUM VITAE



1. Name in full: Mr. TRAN LAN THI NGOC
 Ms. (Family name) (First name) (Middle name)

2. Nationality/Citizenship: Vietnamese

3. Day of Birth: 27 August 1955

4. Address:

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5. Educational background

| <i>School</i> | <i>Location</i> | <i>Degree</i> | <i>Field</i> | <i>Years of study</i> | <i>Grade</i> |
|---|-----------------|----------------|------------------------|-----------------------|--------------|
| National University of Kishinev, Russian Government Scholarship | Former USSR | Bachelor M. S. | Chemical Engineering | 1972-1978 | Excellent |
| University of Sciences, VNU – HCMC | HCMC, Vietnam | Bachelor | Information Technology | 1996-2000 | Good |
| Osaka Prefecture University | Osaka, Japan | Ph. D | Chemistry | 2001-2005 | |

6. Employment:

- ✓ From 1979 to 2009: **Senior Lecturer**, Department of Chemistry, University of Natural Sciences, Vietnam National University of HoChiMinh City (VNU-HCMC).
- ✓ **Referee - Member of National Scientific Board on Chemistry** 2009-2012 (Nafosted – National Fund for Development of Science and Technology), <http://nafosted.gov.vn/index.php/vi/gioi-thieu/Chuyen-gia-danh-gia-va-Hoi-dong-khoa-hoc/HOI-DONG-KHOA-HOC-VA-CHUYEN-GIA-DANH-GIA-4/>



- ✓ Current position/status:

- **Invited Senior Lecturer**, Department of Chemistry, University of Natural Sciences, Vietnam National University of HoChiMinh City (VNU-HCMC).
- **Invited Senior Lecturer**, Department of Chemistry, Tra Vinh University.
- **Head of research group on “Environmental Chemistry”**: Laboratory of Applied Physical Chemistry, <http://apclab.edu.vn/en/Members.aspx>

7. Training and internship

| <i>Course</i> | <i>Institution/Organizer</i> | <i>Location</i> | <i>Duration</i> |
|---|---|---|---------------------------------------|
| Water Pollution | Murdoch University | Center for analyses and experimentation, HCMC | June, 1999 |
| Air pollution monitoring | Osaka institute of public health, Osaka Prefecture University | Osaka, Japan | September- November 2000 |
| Calibration of continuous monitoring devices for air pollutants | Kimoto and Horiba Company | Osaka and Kyoto, Japan | December 2000 |
| Corrosion protection | French Corrosion Association, VAST | VAST, Hanoi, Vietnam | April 2001 |
| Air pollution Management | Swedish Meteo-Hydrological Institute (SIDA program) | Norrkoping, Sweden Chang Mai, Thailand | September – October 2006 June 2007 |



Presentation on the Environmental characteristics and material deterioration in South of Vietnam at Osaka University, January 2005



Chairman at the 18th Symposium on Environmental Chemistry in Tsukuba, June 2009



Meteorological and Atmospheric Pollution Monitoring Station at Swedish Meteorological Hydrological Institute, Norrköping, Sweden



Trainers and trainees of the course of Air pollution Management at welcome party in Changmai, Thailand

8. Other visit to abroad

| <i>Country</i> | <i>Purpose of a visit</i> | <i>Sponsor</i> | <i>Duration</i> |
|-----------------------------|--|---|-----------------|
| Granada, Spain | Attend The International Corrosion Congress | Ministry of Science and Technology of Vietnam | September 2002 |
| Beijing, China | Attend The International Corrosion Congress | Ministry of Science and Technology of Vietnam | September 2005 |
| Roskilde, Denmark | Lecturer exchange with Roskilde University | DANIDA | August 2006 |
| Bangkok, Changmai, Thailand | Attend the Seminar on Air Pollution management | SIDA | June 2007 |
| Osaka, Japan | Researcher exchange with Osaka National University | Japan Society for the Promotion of Science | January 2007 |
| Osaka, Japan | Researcher exchange with Osaka National University | Japan Society for the Promotion of Science | March 2008 |
| Osaka, Japan | Researcher exchange with Osaka National University | Japan Society for the Promotion of Science | January 2009 |
| Tsukuba, Japan | Attend The 18 th Symposium on Environmental Chemistry | Japan Environmental Chemistry Society | June 2009 |
| Nagoya, Japan | Attend The 19 th Symposium on Environmental Chemistry | Japan Environmental Chemistry Society | June 2010 |
| Osaka, Japan | Researcher exchange with Osaka National University | Osaka National University | June 2010 |
| Kyoto, Japan | ICAS2011, IUPAC International congress for analytical sciences | Osaka University | May 2011 |
| Nanjing, China | The 11 th Asian Conference on Analytical Sciences | Osaka University | August 2011 |

9. Language ability

- (1) First language: Vietnamese
- (2) Other languages

| | Writing | Reading | Speaking |
|----------|----------------|----------------|-----------------|
| English | good | excellent | good |
| Russian | excellent | excellent | excellent |
| Japanese | | | Fair |

10. Master thesis

1. Name of the university: National University of Kishinev (former USSR)
2. Year obtained: 1978
3. Title: *Electrochemical deposition of Nickel-Wolfram, Nickel-Molybdenum anticorrosion coating.*

11. Doctor thesis

1. Name of the university: Osaka prefecture University, Japan.
2. Year obtained: 2005
3. Title: *Environmental characteristics and material damage in the South of Vietnam.*

12. Publications

1. T. T. N. Lan., T. V. Hoa, *Programming for potentiometric determination of aminoacids ionization constants in aqueous solutions.* Proceedings of HCM City University Conference on Natural Sciences. January 1995, p. 130-132.
2. T. T. N. Lan, P.V. Trac. *Programming in the study on pH influence on metal electrode potentials in aqueous solutions containing metal and ammonium ions.* Proceedings of HCM City University Conference on Natural Sciences. January 1995, p. 133 - 136.
3. V. D. Huy, T. T. N. Lan, N. T. P. Thoa, L. T. Thanh, *The effect of some drilling fluid additives on the steel drilling pipe and casing corrosion rates.* 3rd Vietnam National Congress on Chemistry, October 1998, Vol. 1, p. 595-598.
4. V. D. Huy, T. T. N. Lan, L. T. Thanh, H. T. B. Ngoc, *The steel corrosion activity of drilling fluid additives.* PetroVietnam review, Vol.2 – 1999, p. 23 –31.
5. T. T. N. Lan, T. V. Man, N. T. P. Thoa, V. D. Huy, *Effect of Ni²⁺ ions and modified plant oil on steel corrosion in the alkaline drilling fluid.* Proceedings of 11th Asian – Pacific Corrosion Control Conference, 1999, Vol. 2, p. 899 – 906.
6. T. T. N. Lan. *New software for the conductometric titration.* Proceedings of HCM City National University Conference on Natural Sciences. May 2000, p. 27 - 31.
7. T. T. N. Lan, Y. Maeda, Y. Tsujino, N.T.P.Thoa. *Monitoring of air pollution in some sites in HoChiMinh City.* Annual meeting of The Society of Atmospheric Environment. Kyushu, Japan, November 2001.
8. Y. Maeda, K. Imamura, T. T. N. Lan, N. T. P. Thoa, V. D. Nam, and P. H. Viet. *Air pollution caused by exhaust gas from 2-cycle engine in Vietnam.* Joint Research on Environmental Science and Technology for the Earth. Annual Report of FY 2001. Osaka 2001. p.75-80.
9. T. T. N. Lan, Y. Maeda, Y. Tsujino. *Effect of air pollution on corrosion of steel, copper and marble in South Vietnam.* Proceeding of the 15th International Corrosion Congress. Spain, September 2002.
10. V. D. Huy, N. T. P. Thoa, T. T. N. Lan, T. V. Man. *Influence of the additives on corrosion behavior of pipeline steel in the injection seawater.* Proceeding of the 15th International Corrosion Congress. Spain, September 2002, p. 70.

11. V.D.Huy, N.T.P.Thoa, T.T.N.Lan, P.Q.Trung. *Influence of the additives in the injection seawater on corrosion behavior of steel casing pipelines*. Scientific Conference on Oil-exploiting Technology , 2002, page 256 -269.
12. T. T. N. Lan, Y. Maeda, Y. Tsujino. *Passive samplers for measuring concentration of acetic and formic acids in the air*. Proceedings of the Conference on Chemistry of HoChiMinh City. May 2003.
13. T. T. N. Lan, Y. Maeda, R. Nishimura, K. Imamura, P. H. Viet, N. T. P. Thao. *Dry deposition monitoring in Vietnam and removal of air pollutants by using biodiesel fuel*. The 4th General Seminar of The Core University Program. Environmental Science and Technology for Sustainable Development. July 2003, Osaka, Japan, p. 7-12.
14. T.T.N. Lan, R. Nishimura, Y. Tsujino , Y. Satoh, N. T. P. Thoa, M. Yokoi, Y. Maeda. *The Effect of acid deposition on atmospheric corrosion of marble in South Vietnam*. The Proceeding of the 13th Asian-Pacific Corrosion Control Conference. Osaka, November 2003. On CD.
15. K. Imamura, Y. Maeda, T.T.N. Lan, N.T.P.Thao, P.H.Viet. *Investigation on Air Pollution in Vietnam - Concentration of water- soluble ions in suspended particulate matters*. The 4th General Seminar of The Core University Program. Environmental Science and Technology for Sustainable Development. Osaka, Japan July 2003, p. 105-109.
16. K. Imamura, Y. Maeda, T.T.N. Lan, N.T.P.Thao, P.H.Viet. *Investigation on Air Pollutants in Vietnam - Components of Water- soluble ions in airborne particulate matter*. 12th Symposium on Environmental Chemistry, Japan, June 2003, p. 546-547.
17. K. Imamura, Y. Maeda, T.T.N. Lan, N.T.P.Thao, P.H.Viet. *Investigation on Air Pollutants in Vietnam – Metal compounds in airborne particulate matter*. 12th Symposium on Environmental Chemistry, Japan, June 2003, p. 158-159.
18. K. Imamura, Y. Maeda, T.T.N. Lan, N.T.P.Thao, P.H.Viet. *Distribution of POPs, PCBs, and PAHs in sediment samples from Vietnam*. 13th Symposium on Environmental Chemistry, Japan, June 2004, p. 672-673.
19. T.T.N. Lan, R. Nishimura, Y. Tsujino, K. Imamura, Y. Maeda, N.T. Hoang. *Atmospheric Concentrations of Sulfur Dioxide, Nitrogen Oxides, Ammonia, Hydrogen Chloride, Nitric Acid, Formic and Acetic Acids in the South of Vietnam Measured by the Passive Sampling Method*. **Analytical Sciences** **20**. January 2004. p.213.
20. T.T.N. Lan, R. Nishimura, Y. Tsujino , Y. Satoh, N. T. P. Thoa, M. Yokoi, Y. Maeda. *The Effects of Air Pollution and Climatic Factors on Atmospheric Corrosion of Marble under Field Exposure*. **Corrosion Science**, 47 (2005) 1023–1038.
21. T.T.N. Lan, N. T. P. Thoa, R. Nishimura, Y. Tsujino, Y. Satoh, M. Yokoi, Y. Maeda. *New model for the sulphation of marble by dry deposition. Sheltered marble – the indicator of the air pollution by sulphur dioxide*. **Atmospheric Environment** **39** (2005) 913–920.
22. K. Imamura, Y. Maeda, N. Takenaka, T.T.N Lan. *Investigation on Air Pollutants in Vietnam - Concentration of Volatile Organic Compounds (VOCs) in Ho Chi Minh City*. 46th Annual Meeting of Japan Society for Atmospheric Environ., p 7-9. Nagoya, Japan, 2005
23. T.T.N. Lan, Y. Tsujino, M. Yokoi, Y. Maeda. *Composition of copper patina formed on sheltered and unsheltered copper in the south of Vietnam*. Proceedings of the 2nd International Symposium on Advanced Materials in Asia-Pacific Rim [ISAMAP]. Hanoi 1-3 April 2005.
24. Y. Maeda, K. Imamura, T.T.N. Lan. *Application of ultrasound to the advanced water treatment*. Sustainable Development – Green cities on River Valley. HoChiMinh, Vietnam, May 2005.
25. K. Imamura, Y. Maeda, T.T.N. Lan. *Investigation on Air Pollutants in Vietnam- Concentration of Volatile Organic Compounds (VOCs) in HoChiMinh*. Sustainable Development – Green cities on River Valley. HoChiMinh, Vietnam, May 2005.
26. T. T. N. Lan, N. T. T. Binh, R. Nishimura , Y. Tsujino , M. Yokoi , Y. Maeda. *Atmospheric corrosion of copper - formation and development of copper patina from the aspect of pollutant deposition*. . Proceeding of the 16th International Corrosion Congress. Beijing - China, September 2005.

27. T. T. N. Lan, N. T. T. Binh, R. Nishimura , Y. Tsujino , M. Yokoi , Y. Maeda. Atmospheric corrosion of copper and seasonal effect on the kinetic of copper corrosion in south Vietnam. Proceeding of the 16th International Corrosion Congress. Beijing - China, September 2005.
28. T.T.N. Lan, R. Nishimura, Y. Tsujino, Y. Satoh, N. T. P. Thoa, M. Yokoi, Y. Maeda. Atmospheric corrosion of carbon steel under field exposure in the southern part of Vietnam. **Corrosion Science**, Volume 48, Issue 1, January 2006, Pages 179-192.
29. T. T. N. Lan, N. T. T. Binh, R. Nishimura , Y. Tsujino, Y. Maeda. Chemical profile of rain, and sulfur and nitrogen deposition by rain in south of Vietnam. Vietnam-France Seminar on Environmental Pollution. Hue, Vietnam, January 2006.
30. T. T. N. Lan, N. T. T. Binh, Y. Maeda. Chemical profile of consecutive rainwaters during rain progress in Osaka and Hochiminh - a comparative study. Vietnam-France Seminar on Environmental Pollution. Hue, Vietnam, January 2006.
31. T. T. N. Lan, N. T. T. Binh, Y. Maeda. Seasonal variation on concentration of water-soluble components in TSP in the big cities in Vietnam. Vietnam-France Seminar on Environmental Pollution. Hue, Vietnam, January 2006.
32. T. T. N. Lan, N. T. T. Binh, Y. Maeda. Seasonal variation on size distribution of mass and concentration of water-soluble components in particulate matter collected by eight-stage Andersen impactors in HoChiMinh, Vietnam. Vietnam-France Seminar on Environmental Pollution. Hue, Vietnam, January 2006.
33. K. Imamura, Y. Maeda, N. Takenaka, P. H. Viet and T. Thi Ngoc Lan. Investigation on Air Pollution in Vietnam —Volatile Organic Compounds in Hanoi and Ho Chi Minh The 6th General Seminar of the Core University Program, Environmental Science & Technology for Sustainability of Asia. Kumamoto, Japan, October, 2006.
34. Atmospheric particles in Ha noi - concentrations of water-soluble inorganic ions from the aspect of long-range transportation. Nguyen Thi Thanh Binh, Pham Hung Viet, Tran Thi Ngoc Lan. Scientific Conference of Vietnam National University, HoChiMinh City 30 November 2006.
35. Tran Thi Ngoc Lan, Nguyen Thi Thanh Binh, Kiyoshi Imamura, Yasuaki Maeda. Air Pollutants in Vietnam - Investigation of Concentration of Volatile Organic Compounds (VOCs) in Ho Chi Minh. Scientific Conference of Vietnam National University, HoChiMinh City 30 November 2006.
36. Atmospheric particles in Ho Chi Minh and My Tho - Size distribution of mass and common water-soluble inorganic ions. Tran Thi Ngoc Lan, Nguyen Thi Thanh Binh. Scientific Conference of Vietnam National University, HoChiMinh City, 30 November 2006.
37. Masao Kishida, Kiyoshi Imamura, Yasuaki Maeda, Tran Thi Ngoc Lan, Nguyen Thi Phuong Thao, and Pham Hung Viet. Distribution of Persistent Organic Pollutants and Polycyclic Aromatic Hydrocarbons in Sediment Samples from Vietnam. **Journal of Health Science**, 53(3), c (2007).
38. Development of copper corrosion products and relation between surface appearance and corrosion rate. Tran Thi Ngoc Lan, Nguyen Thi Thanh Binh, Nguyen Nhi Tru, Tsujino Yoshino, Yasuaki Maeda. International Corrosion Engineering Conference, Seoul, Korea, May 2007.
39. Nguyen Thi Thanh Binh, Tran Thi Ngoc Lan, Pham Hung Viet. Atmospheric particles in Hanoi - concentrations of water-soluble inorganic ions and source regions, The 7th General Seminar of The Core University Program. The 4th Siminar on Environmental Science and Technology issues Related to the Sustainable Development for Unban and Coastal Areas. September 26-27, 2007, Danang, Vietnam, p. 38-51.
40. Nguyen Thi Thanh Binh, Tran Thi Ngoc Lan, Atmospheric particles in Hochiminh - size distribution of water-soluble inorganic ions. The 7th General Seminar of The Core University Program. The 4th Siminar on Environmental Science and Technology issues Related to the Sustainable Development for Unban and Coastal Areas. September 26-27, 2007, Danang, Vietnam, p. 52-62.
41. Tran Thi Ngoc Lan, Nguyen Thi Thanh Binh. Air pollution reduces production and leave area of red radish (*rapahanus sativus* cv. Red chime) and chinese vegetable (*Brassica campestris* var. rosularis cv. ATU171). The 7th General Seminar of The Core University Program. The 4th Siminar on Environmental Science and Technology issues Related to the Sustainable Development for Unban and Coastal Areas. September 26-27, 2007, Danang, Vietnam, p. 63-66.

42. Tran Thi Ngoc Lan, Nguyen Thi Thanh Binh, Nguyen Nhi Tru, Tsujino Yoshino, Yasuaki Maeda. Development of copper corrosion products and relation between surface appearance and corrosion rate. **Corrosion science and Technology**, 2008, 2, 99 - 111. ISSN:1598-6462
43. Tran Thi Ngoc Lan, Pham Thi Lan Anh, Tran Le Thanh Truc. Atmospheric concentration of nitrogen dioxide in HoChiMinh City. The 8th General Seminar of The Core University Program. The 5th Seminar on Environmental Science and Technology issues Related to the Sustainable Development for Urban and Coastal Areas. November 22-24, 2008, Osaka, Japan.
44. Nguyen Thi Thanh Binh, Tran Thi Ngoc Lan, Nguyen Huynh Nhat Minh, A. Kondo, A. Kaga. Emission factors of benzene, toluene, xylene and ethylbenzene in exhausted gas from motorcycles. The 8th General Seminar of The Core University Program. The 5th Seminar on Environmental Science and Technology issues Related to the Sustainable Development for Urban and Coastal Areas. November 22-24, 2008, Osaka, Japan.
45. N. Takenaka, W. Shimazaki, M. Hiroi, Y. Oro, H. Terada, Y. Kuwada, K. Fujiwara, K. Sato, K. Imamura, T. T. N. Lan, T. T. Hien, Y. Sadanaga, H. Bandow, and Y. Maeda. Measurements of HONO in Osaka, Japan and Hanoi and Ho Chi Minh, Vietnam, The 8th General seminar of the core university program - 26-28 Nov 2008, Osaka – Japan, p12 – 15.
46. M. Uebori, K. Imamura, Y. Maeda, N. Takenaka, T. T. Hien, T.T.N. Lan, N. T. P. Thao, and P.H. Viet. Analysis of carbonyl compounds in ambient air by liquid chromatograph /tandem mass spectrometric technique (LC/MS/MS)., The 8th General seminar of the core university program - 26-28 Nov 2008, Osaka – Japan, p 22 – 27.
47. K. Itoh, M. Uebori, K. Imamura, Y. Maeda, N. Takenaka, T. T. Hien, T. T. N. Lan, N. T.P. Thao, and P. H. Viet. A rapid-analysis of polycyclic aromatic hydrocarbons in ambient air by the thermal-desorption gas chromatography/mass spectrometry, The 8th General seminar of the core university program - 26-28 Nov 2008, Osaka – Japan, p16 – 21.
48. [Kishida M](#), [Mio C](#), [Fujimori K](#), [Imamura K](#), [Takenaka N](#), [Maeda Y](#), [Lan TT](#), [Shibutani Y](#), [Bandow H](#). Seasonal change in the atmospheric concentration of particulate polycyclic aromatic hydrocarbons in Ho Chi Minh City, Vietnam. [Bull Environ Contam Toxicol](#). 2009 Nov; 83(5):747-751. Epub 2009 May 27. ISSN: 0007-4861, Impact factor: 0.563 (2008)
49. Tran Thi Ngoc Lan, Do Thi Yen. Diffusive passive sampler for nitrogen dioxide monitoring. Abstract: Proceedings of Analytica Vietnam 2009, Hanoi-Vietnam, March 18-20, 2009, p. 35. Full text: Journal of Analytical Sciences, T-14, N2, 2009, P 122-129.
50. Tran Thi Ngoc Lan, Pham Anh Minh, Dang Ngan Ha. Monitoring of benzene, toluene, ethylbenzene and xylene in a roadside air in HoChiMinh city. Proceedings of Analytica Vietnam 2009. March 18-20, 2009, Hanoi, Vietnam. P. 103-113.
51. Tran Thi Ngoc Lan, Pham Anh Minh, Dang Ngan Ha. Atmospheric benzene, toluene, ethylbenzene and xylenes in relation with traffic in HoChiMinh City. 18th Symposium on Environmental Chemistry. June 2009, Tsukuba, Japan.
52. Tran Thi Ngoc Lan, Nguyen Huynh Nhat Minh, Pham Anh Minh, Dang Ngan Ha, Akikazu Kaga, Akira Kondo. Air pollution by BTEX species in a roadside air in Hochiminh from measurement and dispersion model. JICA-VAST Seminar on Air Quality in Vietnam. January 26 2010.
53. Tran Thi Ngoc Lan, Pham Anh Minh, Dang Ngan Ha. Concentrations of benzene, toluene, ethylbenzene and xylenes of in a roadside air in Hochiminh city. JICA-VAST Seminar on Air Quality in Vietnam. January 26 2010.
54. Tran Thi Ngoc Lan, Nguyen Thi Thanh Binh, Pham Anh Minh, Nguyen Huynh Nhat Minh, Akira Kondo, Akikazu Kaga. Real-world emission factors of benzene, toluene, ethylbenzene and xylenes from motorcycles. 19th Symposium on Environmental Chemistry. 21-23 June, 2010, Chubu, Japan.
55. Tran Thi Ngoc Lan, Le Thi Minh Uyen. Diffusive passive sampler for ozone in ambient air. Abstract: The 5th Vietnam National Conference on Chemistry. Hanoi, November 2010. Full text: Journal of Analytical Sciences, 2010, 48(4C), 324-328.
56. Tran Thi Ngoc Lan, Le Thi Minh Uyen. Ozone concentration in HoChiMinh City measured by a homemade and Ogawa passive sampler. Abstract: The 5th Vietnam National Conference on Chemistry. Hanoi, November 2010. Full text: Journal of Analytical Sciences, 2010, 48 (4C), 335-340.

57. Tran Thi Ngoc Lan. Passive Samplers - the Advantage and the Importance in Environmental Management and Research on Climate Change in Vietnam. Scientific Conference of Vietnam National University – HoChiMinh City, University of Science. 26 November 2010.
58. Le Van Nghiem, Le Thi Minh Uyen, Tran Thi Ngoc Lan. Development of Passive Samplers for Benzene and application in the survey of Benzene concentration in the road-side air in HoChiMinh City. Scientific Conference of Vietnam National University – HoChiMinh City, University of Science. 26 November 2010.
59. Tham Vi Luong, Duong Nguyen Quyet, Tran Thi Ngoc Lan. Development of permeation tubes for preparation of standard gases. Scientific Conference of Vietnam National University – HoChiMinh City, University of Science. 26 November 2010.
60. Tran Thi Ngoc Lan, Duong Nguyen Quyet, Nguyen Thuy Mai Anh. BTEX concentration in HCMC - Performance of SKC and Radiello Passive samplers. Analytica Vietnam 2011. Hochiminh City, Vietnam, April 7th – 9th 2011.
61. Tran Thi Ngoc Lan, Duong Nguyen Quyet, Nguyen Thuy Mai Anh. BTEX concentration in HCMC by Lanwatsu Passive Samplers. Analytica Vietnam 2011. Hochiminh City, Vietnam, April 7th – 9th 2011.
62. Le Van Nghiem, Le Thi Minh Uyen, Tran Thi Ngoc Lan. Daily benzene concentration in the road-side air in Hochiminh City measured by Lanwatsu passive samplers. ICAS2011, IUPAC International congress for analytical sciences. Kyoto, Japan. May 23-26, 2011.
63. Le Thi Minh Uyen, Tran Thi Ngoc Lan. Development of new diffusive passive samplers for ambient air ozone and ozone concentration in Hochiminh City. ICAS2011, IUPAC International congress for analytical sciences. Kyoto, Japan. May 23-26, 2011.
64. Tran Thi Ngoc Lan, Nguyen Thi Thanh Binh. Atmospheric Particles in Hanoi - Concentrations Of Water-Soluble Inorganic Ions And Source Regions. The 11th Asian Conference on Analytical Sciences. Nanjing, China, August 23 – 26, 2011. Proceeding, P 58.
65. Tran Thi Ngoc Lan. Basic Analytical Chemistry - a Comprehensive Textbook, a Directive in Teaching Modern Analytical Chemistry in Undergraduate Course. The 2rd **Asian Analytical Chemistry Network** (AACN)symposium on the education of Analytical Chemistry held during The 11th Asian Conference on Analytical Sciences. Nanjing, China, August 23 – 26, 2011. Proceeding, P 116.
66. Tran Thi Ngoc Lan. Basic Analytical Chemistry - a Comprehensive Textbook, a Directive in Teaching Modern Analytical Chemistry in Undergraduate Course. The 2rd **Asian Analytical Chemistry Network** (AACN)symposium on the education of Analytical Chemistry held during The 11th Asian Conference on Analytical Sciences. Nanjing, China, August 23 – 26, 2011. Proceeding, P 116.
67. Tran Thi Ngoc Lan, Ngo Quang Liem, Nguyen Thi Thanh Binh. Personal exposure to benzene of selected population groups and impact of commuting modes in Ho Chi Minh, Vietnam. *Environmental Pollution*, Volume 175, April 2013, 56-63.
68. Tran Thi Ngoc Lan, Pham Anh Minh. [BTEX pollution caused by motorcycles in the megacity of HoChiMinh](#). *Journal of Environmental Sciences*, Volume 25, Issue 2, 1 February 2013, 348-356.
69. Tran Thi Ngoc Lan, Nguyen Thi Thanh Binh. [Daily roadside BTEX concentrations in East Asia measured by the Lanwatsu, Radiello and Ultra I SKS passive samplers](#). *Science of The Total Environment*, Volume 441, 15 December 2012, 248-257.
70. **Trần Thị Ngọc Lan**, Hoàng Trọng Tiến Đức, Hitoshi Watarai. “Zero Velocity” – a new method for determination of magnetic susceptibility of micro-particles. Phương pháp “vận tốc không” để xác định độ nhạy từ của các vi hạt. The 8th Scientific Conference of Vietnam National University – HoChiMinh City, University of Science. HCMC 9 November 2012.
71. **Trần Thị Ngọc Lan**, Hoàng Trọng Tiến Đức *Application of tobacco filters for gaseous NO₂ sampling*. Ứng dụng đầu lọc thuốc lá để lấy mẫu NO₂ trong không khí. The 8th Scientific

Conference of Vietnam National University – HoChiMinh City, University of Science. HCMC 9 November 2012.

72. **Trần Thị Ngọc Lan** Tổng quan về các phương pháp quan trắc VOC trong không khí. Khuyến cáo về những thiếu sót trong quan trắc voc ở Việt Nam hiện nay. *Overview on the methods for voc monitoring. Common mistakes in voc monitoring in Vietnam today.* The 8th Scientific Conference of Vietnam National University – HoChiMinh City, University of Science. HCMC 9 November 2012.
73. Chu Minh Hai, Nguyen Huynh Nhat Minh, Phạm Anh Minh, Tran Thi Ngoc Lan. Characterization of btx levels and sources in Hochiminh city using homemade passive samplers. *Analytica Vietnam* 2013, HoChiMinh -Vietnam, April 17-18 2013.
74. Tran Thi Ngoc Lan, Ngo Quang Liem, Nguyen Thi Thanh Binh. Personal Exposure to Benzene of Selected Population Groups and Impact of Commuting Modes in HoChiMinh. *Analytica Vietnam* 2013, HoChiMinh -Vietnam, April 17-18 2013.
75. Tran Thi Ngoc Lan. **Teaching Analytical chemistry in University of Science, VNU.** The 3rd **Asian Analytical Chemistry Network (AACN)** symposium on the education of Analytical Chemistry held during The 12th Asian Conference on Analytical Sciences. Fukuoka, Japan, August 22 – 24, 2013. Proceeding.
76. Tran Thi Ngoc Lan, Phan Thanh Nhan, Le Thi Ngoc Tan. **Personal exposure to benzene of population groups of a high risk of benzene exposure in HoChiMinh.** The 12th Asian Conference on Analytical Sciences. Fukuoka, Japan, August 22 – 24, 2013. Proceeding.

12. Book published

1. Basic electrochemistry (in Vietnamese, VNU-HCMC).
2. Physical Chemistry Practice (in Vietnamese, VNU-HCMC).
3. Basic Analytical Chemistry (translated from Japanese, Printed in 2010 in Japan, and imported to Vietnam. Gift to Vietnam Universities). Sponsored by Prof. Takagi, Kyushu Woman University and Prof. Watarai, Osaka National University.

Lời tựa từ chủ biên



Tôi rất vui và vinh hạnh khi phiên bản tiếng Việt của cuốn giáo trình "Cơ sở Phân tích Hóa học" đến với bạn đọc Việt Nam. Trước hết, tôi gửi lời cảm ơn chân thành tới Tiến sĩ Trần Thị Ngọc Lan, khoa Hóa, trường Đại học Khoa học Tự Nhiên, Đại học Quốc gia thành phố Hồ Chí Minh, người đã vượt nhiều khó khăn để chuyển tải các kiến thức khoa học từ tiếng Nhật sang tiếng Việt. Tôi chân thành cảm ơn nhà xuất bản Kagakudojin, Kyoto, Nhật Bản; và Giáo sư Watarai, Trường Đại học Quốc gia Osaka; và tất cả các thành viên dịch sách ở cả hai phía Việt Nam và Nhật Bản.

Trong thời gian dịch cuốn sách, tôi đã có dịp thăm thủ đô Hà nội và tham dự Hội nghị Hiệu trưởng các trường đại học Việt Nam – Nhật Bản, tổ chức vào ngày 17-18 tháng 9 năm 2009. Nhân dịp này, với tư cách là Hiệu trưởng Trường Đại học Tổng hợp Nữ Fukuoka, tôi đã ký kết văn bản hợp tác trong lĩnh vực giáo dục đào tạo với Trường Đại học Quốc gia Hà nội, và văn bản ghi nhớ về trao đổi sinh viên. Thời gian của tôi ở Hà nội rất ngắn. Tuy nhiên, ngoài Trường Đại học Quốc gia Hà nội, tôi đã tới thăm Văn miếu Quốc tử giám – trường Đại học đầu tiên của Việt Nam, Bảo tàng Phụ nữ Việt Nam, một số viện nghiên cứu, một số cơ quan; tìm hiểu nguồn nhân lực và cơ sở vật chất; nhờ đó làm quen và hiểu được phần nào lịch sử phát triển và các hoạt động kinh tế, văn hóa, xã hội của thủ đô Hà nội nói riêng và của đất nước Việt Nam nói chung. Tôi có ấn tượng rất mạnh với sự năng động, sáng tạo và đóng góp to lớn của thế hệ trẻ vào sự phát triển của xã hội Việt Nam hiện đại.

Phương pháp tiếp cận, thu thập, và xử lý các thông tin khoa học, các kết quả phân tích vật chất có vai trò hết sức quan trọng trong khoa học tự nhiên, cũng như trong các lĩnh vực công nghệ sinh học, y học, dược phẩm và thực phẩm. Tôi tin cuốn sách này sẽ giúp các bạn trẻ Việt Nam nâng cao tầm hiểu biết ở khía cạnh phân tích tìm hiểu thế giới vật chất, góp phần giúp các bạn vững bước tiến lên trên con đường sự nghiệp của mình trong xã hội Việt Nam phát triển nhanh như vũ bão hiện nay.

Giáo sư, Tiến sĩ

Mako to Takagi

Preface from the Editor

It is a great pleasure and honor to have Vietnamese version of our Japanese textbook, *Basic Analytical Chemistry* to come out to readers in Vietnam. First of all, I would like to offer my sincerest thanks to Dr. Tran Thi Ngoc Lan of University of Science, National University - Ho Chi Minh City, for undertaking the laborious work of translation. Our hearty gratitude is also to Kagakudojin Publishing Company, Inc., Kyoto, Japan; and to Prof. Watarai of Osaka University, as well as many other people involved in making the translated edition possible.

While the translation was under way, I happened to visit Hanoi to attend the First Vietnam-Japan University Presidents' Conference, September 17-18, 2009. Taking advantage of this occasion, Fukuoka Women's University, where I presently serve as president, concluded an agreement with Vietnam National University, Hanoi for academic cooperation, and confirmed a memorandum on student exchange. My stay in Hanoi was only very limited, but in addition to the campus of Vietnam National University, I managed to visit Confucius Joss House, the Vietnam Women's museum, and other institutions or facilities, thus getting in touch with the invigorating activities within the city. I was very much impressed by the young people's dedication and progressive attitude.

Methods for collecting scientific or analytical information on physical materials are of basic importance in natural science in general, including its engineering aspects as well as those of medical, pharmaceutical and nutritional fields. I sincerely hope that this textbook will help young Vietnamese students become familiar with the analytical aspects of the physical world and help them step up to a variety of higher professional careers in the quickly changing Vietnam society.

Professor

Makoto Takagi

Fukuoka Women's University
Japan

Lời tựa từ người tặng



Tôi rất vui và vinh hạnh gửi tặng phiên bản tiếng Việt của cuốn giáo trình "Cơ sở Phân tích Hóa học" đến các bạn đọc Việt Nam. Tôi cần phải nhấn mạnh rằng, phiên bản tiếng Việt này khó trở thành hiện thực nếu thiếu sự góp sức của tiến sĩ Trần Thị Ngọc Lan, khoa Hóa, trường Đại học Khoa học Tự Nhiên, Đại học quốc gia thành phố Hồ Chí Minh, dịch giả chính của cuốn sách này. Tôi cũng chân thành cảm ơn Giáo sư Makoto Takagi, tác giả cuốn sách, đồng thời cũng là nhà đồng tài trợ; ngài Kato, biên tập cuốn sách bằng tiếng Nhật; và nhà xuất bản Kagakudojin, Kyoto, Nhật Bản. Tôi cũng cảm ơn ngài Takechi, Trường Đại học Tổng hợp Quốc gia Osaka, người đã tích cực tham gia dịch sách.

Nhân tiện tôi cũng muốn nhắc lại vì sao tôi đề xuất dịch sách khoa học kỹ thuật sang tiếng Việt. Tôi đến thăm các trường đại học ở Hà nội và thành phố Hồ Chí Minh lần đầu tiên vào mùa hè năm 2008. Sau khi thảo luận với các giáo sư của các trường mà tôi thăm, trong đầu tôi xuất hiện một ý tưởng là sách giáo trình môn Hóa bằng tiếng mẹ đẻ rất cần thiết cho sinh viên. Cách tốt nhất để các sinh viên đại học lĩnh hội các ý tưởng mới, các kiến thức cơ bản của khoa học là đọc và hiểu bằng tiếng mẹ đẻ. Tôi hy vọng rằng cuốn sách hóa học đầu tiên dịch từ tiếng Nhật sang tiếng Việt này sẽ được sử dụng rộng rãi trong trường đại học Việt Nam, đóng góp phần nào vào sự nghiệp đào tạo trong lĩnh vực Hóa phân tích.

18/01/2010

Giáo sư, Tiến sĩ

Hitoaki Watarai

Khoa Hóa

Đại học Khoa học – Trường trên đại học
Đại học Quốc gia Osaka, Nhật Bản

Lời tựa từ dịch giả

Là dịch giả cuốn giáo trình "Cơ sở Phân tích Hóa học", tôi rất vinh hạnh làm đầu mối tiếp nhận sách do Giáo sư Makoto Takagi, Trường Đại học Tổng hợp Nữ Fukuoka, tác giả cuốn sách, và Giáo sư Hitoshi Watarai, trường Đại học Tổng hợp Quốc gia Osaka Nhật Bản, gửi tặng các trường đại học Việt Nam. Trước hết tôi gửi lời cảm ơn sâu sắc đến Giáo sư Makoto Takagi, Giáo sư Hitoshi Watarai, ngài Kato và nhà xuất bản Kagakudojin, Kyoto, Nhật Bản, đã giúp đỡ cả về vật chất lẫn tinh thần để đưa cuốn sách trên đến với sinh viên và các nhà khoa học Việt Nam. Tôi chân thành cảm ơn ngài Takechi Trường Đại học Tổng hợp Quốc gia Osaka; và các giáo sư của các trường Đại học Khoa học Tự Nhiên, Đại học Quốc gia Tp. Hồ Chí Minh, trường Đại học Khoa học Tự Nhiên, Đại học Quốc gia Hà nội, và trường Đại học Dược TP. Hồ Chí Minh; những người đã sát cánh cùng tôi phiên dịch và hiệu đính phiên bản tiếng Việt của cuốn sách.

Giáo sư Hitoshi Watarai thăm trường Đại học Quốc gia thành phố Hồ Chí Minh vào cuối năm 2008. Ý tưởng dịch sách khoa học kỹ thuật sang tiếng mẹ đẻ phục vụ giảng dạy ở các trường đại học do giáo sư đề xuất trùng với ý nguyện của tôi mà đến giờ chưa thực hiện được do không có kinh phí và bản quyền. Tôi rất mừng khi các Giáo sư Nhật Bản và Nhà xuất bản Nhật Bản sẽ tài trợ cả hai vấn đề trên. Cuốn "Cơ sở Phân tích Hóa học" được chúng tôi chọn dịch đầu tiên. Là các giáo sư giảng dạy lâu năm ở trường đại học, chúng tôi hiểu sâu sắc tầm quan trọng của các kiến thức khoa học cơ bản và các kỹ thuật tiên tiến đối với sự phát triển của khoa học kỹ thuật. Cuốn "Cơ sở Phân tích Hóa học" cung cấp các kiến thức bổ ích cho sinh viên không chỉ thuộc lĩnh vực Hóa học, mà cả lĩnh vực Sinh học và Vật lý. Tôi hy vọng những nỗ lực của chúng tôi sẽ góp một phần nhỏ vào sự nghiệp giáo dục thế hệ trẻ trên con đường tiến tới thế giới khoa học rộng mở.

Đây là cuốn sách Hóa đầu tiên được dịch từ tiếng Nhật sang tiếng Việt. Chúng tôi gặp rất nhiều khó khăn về thuật ngữ, do cho đến nay Việt Nam chưa có thuật ngữ chuẩn. Chúng tôi xin lỗi độc giả nếu có lỗi phát sinh. Mọi góp ý chân thành xin gửi tới người dịch.

Tiến sĩ **Trần Thị Ngọc Lan**
Đại học Quốc gia Tp. Hồ Chí Minh

13. Courses given to students

1. Basic Electrochemistry.
2. Electrochemical Analyses.
3. General Chemistry.
4. Air pollution Monitoring.
5. Physical Chemistry.
6. Kinetic of chemical reactions.
7. Thermodynamic Chemistry.

14. Research experiences

| N | Name of projects | Research proposal | Sponsor | Role in project |
|----|--|---|---|--------------------------------------|
| 1. | Effect of drilling fluid on corrosion of casing pipes. | <ul style="list-style-type: none"> - Effect of drilling fluid on corrosion rate of casing pipes. - Inhibition efficiency of some commercial inhibitors by electrochemical and mass-loss methods. | Vietsopetro Oil exploiting Company (Vietnam Russian Joint-venture) | Researcher |
| 2. | “Conductivity Titration” for conductivity meter | <ul style="list-style-type: none"> - Write a software for automatic titration by conductivity method | Vietnam national University - HCMC | Key Researcher |
| 3. | Effect of air pollutants on material damage in South-East Asia | <ul style="list-style-type: none"> - Air pollution monitoring in South of Vietnam (NO_x, SO₂, NH₃, PM, HCl, HNO₃, carboxylic acids) by passive sampling methods. - Atmospheric acidification (acid rains, gaseous acidic pollutants) - Atmospheric corrosion of steel, copper and marble. | Japan Society for the Promotion of Science (JSPS) 2000-2005 | Principal Investigator , PhD |
| 4. | VOC pollution in big cities of Japan and Vietnam | <ul style="list-style-type: none"> - Monitoring of BTXE and other hydrocarbons, aldehydes, halogenated hydrocarbons by EPA TO-14, TO-15 methods (Gas sampling by canisters). | Japan Society for the Promotion of Science (JSPS) 2000-2008 | Researcher, responsible for sampling |
| 5. | Developments of passive samplers for atmospheric carboxylic acids. | <ul style="list-style-type: none"> - Developments of bag-type passive samplers for carboxylic acids based on triethanol amine. | Vietnam National University HCMC, 2002 | Principal Investigator |
| 6. | Developments of passive samplers for atmosph. SO ₂ . | <ul style="list-style-type: none"> - Developments of bag-type passive samplers for SO₂ based on carbonate. | Vietnam National University HCMC, 2003 | Principal Investigator |
| 7. | PM Pollution in Hanoi. | <ul style="list-style-type: none"> - Sampling of PM by high-volume sampler. - Analyses of metals by ICP-MS. - Analyses of inorganic soluble components by IC. | VNU HCMC, 2004. Join study with Osaka Pollution Control Center, Vietnam-Japan Core-University Program (JSPS). | Key Researcher |

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|-----|--|--|---|---|
| 8. | Effect of Air Pollutants on Cultivar. OTC (open-top chamber) study | <ul style="list-style-type: none"> - Monitoring of O₃, SO₂, and NO₂ by passive sampling methods. - Cultivation of red radish (<i>rapahanus sativus</i> cv. Red chime) and chinese vegetable (<i>Brassica campestris</i> var. rosularis cv. ATU171): dry mass and leave area. - Correlation of dry mass and leave area with pollution levels. | Join study with Central Research Institute of Electric Energy (Chiba, Japan), 2005 | Key Researcher |
| 9. | PM Pollution in HoChiMinh. | <ul style="list-style-type: none"> - Sampling of PM by high-volume sampler. - Analyses of inorganic soluble components by IC. | VNU HCMC, 2005. | Principal Investigator |
| 10. | Size distribution of PM in HCMC. | <ul style="list-style-type: none"> - Sampling of PM by Andersen sampler. - Analyses of inorganic soluble components by IC. | Vietnam National University HCMC, SIDA (Sweden) , 2006-2007. | Principal Investigator |
| 11. | BTEX emission factors of common traffic means and BTEX concentrations in HCMC. | <ul style="list-style-type: none"> - Monitoring of Air and exhaust gas from motorcycles, car and trucks for BTEX species by NIOSH 1501 method. - Emission factors of BTEX of motorcycles, car and trucks. - Concentrations of BTEX by measurement and by dispersion modeling. | Join research with Osaka National University, Vietnam-Japan Core-University Program (JSPS). 2008. | Key Researcher |
| 12. | Regional influence on air pollution in HCMC and Hanoi. | <ul style="list-style-type: none"> - Sampling of PM by high-volume sampler. - Projector analyses by HYSPLIT NOAA model. - Source appointment. | Vietnam National University HCMC, 2008. | Principal Investigator |
| 13. | Concentration of Benzene, Toluene, and C ₂ - Benzene at roadsides in HoChiMinh | <ul style="list-style-type: none"> - Active sampling at 17 sites in HCMC alongside with Traffic recording. - Analyses by GC. - Statistical analyses to evaluate impact of different traffic means on BTEX pollution in HCMC. | Vietnam National University HCMC, 2009. | Principal Investigator |
| 14. | Development of sensitive passive sampler for monitoring benzene, toluene, ethylbenzene and xylenes in the ambient air. | <ul style="list-style-type: none"> - Development of passive sampler for BTEX. - Evaluating a performance of commercialized and own-made passive samplers for BTEX under climatic condition in Vietnam. - Exposure to BTEX and ambient-air BTEX level in East Asia. | Nafosted 2009-2011. | Principal Investigator |
| 15. | Traffic survey and roadside BTEX and NO ₂ in HoChiMinh. | <ul style="list-style-type: none"> - Traffic volume and concentration of BTEX and NO₂ at 51 sites HCMC. | JICA project 8/2010 – 1/2011 | Project Manager, Key scientific advisor |
| 16. | Biodiesel from jatropa oil and mitigation of climate change | <ul style="list-style-type: none"> - Production of biodiesel from cash-fish and jatropa oil. - Study of exhaust from vehicles with biodiesel. | JICA, 2011-2017 | Researcher |

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|-----|---|--|--|---|
| 17. | Chemical Emergence Response Program for Binh Duong Industry | <ul style="list-style-type: none"> - Management of enterprises for chemical safety. - Chemical Spill Emergency Plan. | Project of BinhDuong Department of Trade and Industry 2013 | Project Manager, Key scientific advisor |
|-----|---|--|--|---|

I hereby certify the statements above to be true and correct

March 25th 2013

Date

Tran Thi Ngoc Lan

Signature

