

CURRICULUM VITAE

JÜRGEN M. LOBERT

Professional Contacts:

Entegris, Inc.
10 Forge Park
Franklin, MA 02038 USA

Tel: +1 508 553 8364
Email: Jurgen_Lobert@entegris.com
Web: <http://www.entegris.com/>



Personal Contacts:

430 Franklin Village Dr. #104
Franklin, MA 02038-4007, USA
Email: science@JurgenLobert.net
Web: <http://JurgenLobert.net/>

Citizenship: German.
Holder of US work permit / permanent residence (Greencard)

01-April-2009

1. TABLE OF CONTENTS

| | |
|--|----|
| Personal Data | 1 |
| 1. Table of Contents | 2 |
| 2. Education..... | 3 |
| 3. Employment..... | 3 |
| 4. Experience..... | 4 |
| 4.1. Research | 4 |
| 4.2. Industry..... | 4 |
| 4.3. Details in chronological order | 4 |
| Languages | 4 |
| Computer Platform Experience..... | 4 |
| October 1984 to December 1985 | 5 |
| January 1986 to April 1986..... | 5 |
| May 1986 to February 1990..... | 5 |
| February 1990 to August 1991 | 6 |
| September 1991 to December 1996..... | 6 |
| January 1997 to March 2001 | 6 |
| February 2001 to April 2003 | 7 |
| May 2003 to present..... | 7 |
| 5. Publications | 9 |
| 5.1. Major Publications | 9 |
| 5.2. Other Publications | 13 |
| 6. Patents..... | 13 |
| 7. Experimental Campaigns and Field Trips..... | 14 |
| 8. Other Projects..... | 15 |
| 9. Major Presentations, Conferences and Published Abstracts..... | 15 |
| 10. Advisory / Teaching Experience | 20 |
| 11. Grants and Proposals | 21 |
| 12. Professional Affiliations..... | 21 |
| 13. Awards and Recognitions | 21 |
| 14. Continued Education | 21 |

2. EDUCATION

Ph.D. 02/90

Degree *Doktor der Naturwissenschaften* (Doctor of Natural Sciences) in Chemistry with major in Atmospheric Chemistry, Johannes Gutenberg Universität Mainz / Max Planck Institut für Chemie, Mainz, FR Germany. Advisors: Prof. Dr. Peter Warneck, Prof. Dr. Paul J. Crutzen.

Diplom 07/85

Degree *Diplom Ingenieur der Chemie* (Engineer of Chemistry, a diploma in General Chemistry and Chemical Engineering), thesis in Nuclear Chemistry, Technische Universität Darmstadt, FR Germany. Advisor: Prof. Dr. Helmut Münzel[†].

Vordiplom 04/82 (a non-job-qualifying equivalent of a bachelor's degree)

General chemistry, Technische Hochschule Darmstadt, FR Germany.

High School 07/79

Adolf Reichwein Gymnasium, Heusenstamm, FR Germany.

3. EMPLOYMENT

- May 2003 – present **Director, Analytical Services** (after November 2005)
Entegris, Inc., Franklin, MA, USA
Engineering Scientist. Manager, Metrology Business Group (after August 2003).
Extraction Systems Inc., Franklin, MA, USA
- Feb 2001 – Apr 2003 **Chief Scientist, Project Engineer**. Teledyne Advanced Pollution Instrumentation
(API), Engineering Department, San Diego, California, USA.
- Jan 1997 – Mar 2001 **Assistant Project Scientist V / Associate Project Scientist II** (after June 1998).
Center for Clouds, Chemistry & Climate, Scripps Institution of Oceanography,
University of California at San Diego, La Jolla, California, USA.
- Sep 1992 - Dec 1996 **Research Associate**. Cooperative Institute for Research in Environmental Sciences.
National Oceanic and Atmospheric Administration, Climate Monitoring and
Diagnostics Laboratory, Boulder, Colorado, USA.
- Sep 1991 - Aug 1992 **Postdoctoral Research Associate**. National Research Council. National Oceanic and
Atmospheric Administration, Climate Monitoring and Diagnostics Laboratory,
Boulder, Colorado, USA.
- Feb 1990 - Aug 1991 **Research Chemist, Project Leader**. Max Planck Institute for Chemistry,
Airchemistry Dept., Mainz, FRG.
- May 1986 - Jan 1990 **Research Assistant**. Max Planck Institute for Chemistry, Airchemistry Dept., Mainz,
FRG.
- Jan 1986 - Apr 1986 **Visiting Scientist**. Hahn-Meitner Institute for Nuclear Science, Division of Radiation
Science, Berlin, FRG.
- Aug 1985 - Dec 1985 **Research Assistant**. Technische Hochschule Darmstadt, Division of Nuclear
Chemistry, Darmstadt, FRG.
- Oct 1984 - Jul 1985 **Graduate Research Assistant**. Technische Hochschule Darmstadt, Division of
Nuclear Chemistry, Darmstadt, FRG.

4. EXPERIENCE

4.1. RESEARCH

After receiving my diploma in nuclear chemistry with focus on neutron activation analysis, I switched my main focus to atmospheric chemistry and received a Ph.D. for studies on gaseous emissions from biomass burning. I spent my first postdoctoral year mostly on studies of trace gas fluxes from soils and moved to the United States in 1991 to start work on air/sea exchange of halogenated compounds. I followed this five year experience in 1997 with a project in trace gas, aerosol and radiation measurements and the establishment and operation of a remote, tropical island station.

Most of my research was dedicated to observational science and instrumental analytics. Throughout my scientific career, laboratory work embraced a substantial amount of my research time, with the remainder being data analysis, presentations, and publications, a mix that I enjoyed thoroughly. Instrumental experience includes a very wide variety of detectors and I particularly find the gas chromatograph / mass spectrometer combination one of the most powerful and versatile instruments in analytical chemistry with a wide spectrum of applications.

On a number of ground-based, airborne and ship-board research expeditions to the world's oceans, Africa, Antarctica, the Maldives and other places, I have gained extensive experience in the preparation, organization and implementation of field experiments and projects. Those field experiences, in particular, made me a strong believer in the value of collaboration, team work and open data policies.

4.2. INDUSTRY

Joining the industry in 2003 changed course, but built on my strengths that I gathered during my scientific career. My time at Teledyne-API was spent on the development and improvement of trace-level NO_x and other analyzers with emphasis on mechanical engineering. My first position at Extraction Systems, Inc (later Mykrolis and Entegris) focused on the development of a trace-level monitoring system for ammonia and amines

My most recent experience in engineering and developing commercial trace gas analyzers has helped me broaden my instrumental, engineering and mechanical skills and the perspective on building instruments from the ground up with very tight budget restrictions. Furthermore, heading an analytical laboratory taught me the value (and cost) of no-compromise quality and unequivocal customer focus.

During my career, I also gathered considerable communications experience in many presentations and through supervising students at the Max Planck Institute, CMDL and SIO as well as educating and supervising onsite maintenance personnel in the Maldives and supervising technical personnel at T-API. Shortly after joining Extraction Systems, I started managing a business group with 4-5 members, temporarily expanding to 11 across multiple labs and locations. I have always thoroughly enjoyed working with colleagues, students and technical staff at every level and believe that personnel focus is fundamental to productive work.

4.3. DETAILS IN CHRONOLOGICAL ORDER

Languages

Fluent in written and spoken German (native language).

Fluent in written and spoken English.

Basic Latin, Bavarian, Texan and Australian.

Computer Platform Experience

In-depth knowledge of Windows Workstation and Server platforms and some Windows system administration (NT, 2000, XP, 95, 98, 3.x) and DOS on x86-type processors and a broad variety of applications for these platforms; familiar with Macintosh System 7.x on 680x0 and PowerMac/G3; very basic experience of UNIX on HP and IRIX on Silicon Graphics workstations. Experienced in Ethernet / TCP/IP networking. Familiar with QMIS, SAP and basic Oracle/Business Objects MRPs and document control software.

Being an advanced Windows user, I am naturally good at trouble-shooting computers...

Software specialties: image editing, website development, advanced Microsoft Office use.

Programming languages: intermediate HTML, basic Java, BASIC, Labware LIMSbasic and macro languages.

Labware LIMS system development and administration, Versions 5 and 6, WebLIMS 3.

October 1984 to December 1985

Organization: Technische Hochschule Darmstadt, Division of Inorganic and Nuclear Chemistry.

Job title: Diplomand (graduate/masters student) and Research Assistant, supervisor: Prof. Dr. Helmut Münzel †.

Project and thesis title: Diffusion of ^{135}Xe and $^{85\text{m}}\text{Kr}$ in Zircaloy-2.

Job responsibilities:

- Development of a method for the infusion of Zircaloy-2 metal plates with radioactive noble-gases.
- Specification, design, and production of Uranium metal plates and irradiation containers
- Handling of highly radioactive materials
- Knowledge of security laws and disposal methods for radioactive wastes.
- Setup and maintenance of a diffusion system for multi-channel gamma-ray spectrometer analysis of radioactive gases, the cryogenic preconcentration of such gases on active charcoal and the design of a diffusion chamber maintained at temperatures between 1000 and 1400 Kelvin with preceding carrier gas purification.
- Some administrative responsibilities.

January 1986 to April 1986

Organization: Hahn Meitner Institut für Kernforschung, Berlin, FRG, Division of Strahlenforschung (Radiation Science).

Job title: Visiting scientist, supervisor: Prof. Dr. Adalbert Ding.

Project title: Studies on noble gas clusters.

Job responsibilities:

- Construction of a magnetic shield for electron spectrometers and participation in synchrotron experiments at the Berliner Elektronen Synchrotron BESSY.
- Participation in experiments determining gas clusters of 2 to 40 molecular units of Ar, Xe, and SF₆ with time of flight mass spectrometers and synchrotron light as an ionization source.
- These cluster experiments were planned to be carried out using electron spectrometers instead of synchrotron light, determining ionizing electrons, ionized electrons and the ionized clusters in a three-way coincidence measurement using Faraday grids, time-of-flight MS and a second electron spectrometer as detectors. For housing the two electron spectrometers, a shield against earth magnetic and metal magnetic fields was constructed. It had a cylindrical shape with grids at both ends to enable evacuation down to 10⁻⁵ hPa. This setup required knowledge of shielding materials, the design and final drawing of the shielding chamber including a frame for the spectrometers and detectors, which are mounted around the molecular beam of the gases. The shield was built and put to use during the months following my visit.

May 1986 to February 1990

Institution: Max Planck Institut für Chemie, Airchemistry Dept. / University of Mainz, Mainz, FRG.

Job title: PhD student, supervisor: Prof Dr. Peter Warneck and Prof. Dr. Paul J. Crutzen.

Project title: Biomass Burning Laboratory and Field Studies.

Job responsibilities:

- Construction, development, setup, and maintenance of a burning apparatus built into a moveable trailer including all required analytical instruments in a team together with an engineer and a post doctoral scientist.

- Setup and maintenance of different gas-analyzers such as infrared, chemo luminescence, and gas chromatographic detectors including nitrogen specific TID, FID, ECD, TCD detectors operating with packed and capillary columns.
- Determination of low molecular weight nitriles (HCN, CH₃CN, CH₂CHCN, CH₃CH₂CN), CO₂, CO, NO_x, N₂O, CH₄ in the emissions of burning biomass in the ppt to % concentration range.
- Development of different sampling systems including stainless steel and glass cylinders and scrubber methods. Setup and maintenance of a vacuum apparatus and preparation of liquid and gaseous standards.
- Preparation and implementation of expeditions to Australia and Africa studying bushfire emissions from airborne derived samples.
- Working with and training colleagues in the use of personal computers and word processors, spreadsheet and graphics programs as well as data acquisition devices.

February 1990 to August 1991

Organization: Max Planck Institut für Chemie, Airchemistry Department, Mainz, FRG.

Job title: Research scientist, project leader, supervisor: Prof. Dr. Paul J. Crutzen.

Project title: Emissions From Biomass Decomposition in Temperate Forests, and:

Biomass Burning Emissions (Continuation of Experimental and Field Studies, see above)

Job responsibilities:

- Design, setup and maintenance of soil flux boxes, sampling devices, data acquisition and analysis systems for the determination of physical parameters and gas emissions during the decomposition of forest litter.
- Measurements of CO₂, CO, H₂, N₂O, CH₄ and H₂O with GC, NDIR and other techniques.
- Planning and execution of long-term, weekly field experiments in nearby forests and coordination of work with other groups.

September 1991 to December 1996

Organization: National Oceanic and Atmospheric Administration, Climate Monitoring and Diagnostics Laboratory, Nitrous Oxide and Halocarbons Division, Boulder, Colorado, USA.

Job title: Research Associate (National Research Council and Cooperative Institute for Research in Environmental Sciences), supervisor: Dr. James W. Elkins.

Project title: Determination of halogenated compounds and N₂O in air and oceanic waters.

Job responsibilities:

- Design, construction, and setup of gas chromatographic equipment for the determination of halocompounds, hydrocarbons, and nitrous oxide in ambient air and in the headspace of a surface-water equilibrator during several ocean expeditions.
- Determination of mixing ratios, saturation anomalies and fluxes for the compounds in order to evaluate their possible oceanic sources or sinks.
- Preparation and participation in three Pacific and one Atlantic research cruises.
- Design, implementation and maintenance of the World Wide Web representation of the Nitrous Oxide And Halocompounds group (now HATS).

January 1997 to March 2001

Organization: Center for Clouds, Chemistry & Climate, Scripps Institution of Oceanography, University of California at San Diego, La Jolla, California, USA.

Job Title: Assistant Project Scientist V, Associate Project Scientist II starting 07/1998, supervisor: Prof. V. Ramanathan.

Project title: Project Scientist for INDOEX ground-based measurements in the Maldives. Site Scientist for KCO until March 1999 (end of INDOEX).

Job responsibilities:

- Selection of a remote measurement site in the Republic of Maldives and coordination of the site setup with local officials. This included architectural design and specification of an observatory building, a 13 m tower for radiometric measurements and air-sample inlets and the actual setup of instruments for the INDOEX experiments and for long-term operation at the Kaashidhoo Climate Observatory (KCO).
- Construction, setup and remote maintenance of trace gas analyzers for CO, CFCs, SF₆ and Ozone as well as a suite of radiometric instrumentation for broad- and narrow-band radiation and a computer network on a remote island in the Maldives for the Indian Ocean Experiment (INDOEX).
- Continued onsite and remote training of Maldivian locals to maintain INDOEX instrumentation.
- Maintenance trips to the site for check-ups, upgrades and implementation of new instruments.
- Partial preparation and hosting of scientific meetings.
- Preparation for INDOEX field experiments and coordination of all scientists participating at KCO.
- Coordination and setup of a local measurement site in La Jolla, California for testing and operation of similar instrumentation within CARPOS (the Clouds, Aerosol, Radiation, Pollution Observing System) during 1997/98, establishment of a new C4 laboratory in 2000.
- Some world wide web development for the C4 homepage and particularly the KCO observatory website at <http://www-indoex.ucsd.edu/observatory/>.

February 2001 to April 2003

Organization: Teledyne Advanced Pollution Instrumentation (API), Engineering Department, San Diego, California, USA.

Job Title: Chief Scientist, Project Engineer for the E-series chemiluminescence NO_x and O₃ analyzers as well as for APIcom instrument control software, Ethernet interface and other common-platform projects.

Job responsibilities:

- Development of the E-series NO_x and O₃ analyzers. Mechanical and electrical layouts, SolidWorks 2003 CAD work, design verification, durability, verification and compliance testing.
- Driving the development of APIcom instrument control software. Specification and verification of software functionality, usefulness and appearance. Writing manual, help files and installation routines.
- EPA equivalency and CE Mark compliance testing, writing of manuals and test reports, full documentation of products including specification sheets, definition of optional equipment and operating parameters, DCR/DCN document control including inventory and kitting, BOM structure review and definition, ISO 9001 compliance procedures and documentation.
- Specification of new developments, organization of task schedules, design review meetings and data reports, design and assembly of prototypes, transition of new products to manufacturing.
- Data analysis and publication.
- Evaluation of new contractors and prospective employees, basic and advanced training of staff and customers, representing the company on sales shows and technical meetings, some customer service.
- Some development and maintenance for the company's internet website.

May 2003 to present

Organization: Extraction Systems Inc. (and several months Mykrolis, Inc before its merger with Entegris), Metrology Group.

Job Title: Engineering Scientist; Manager, Metrology Business Group (August 2003 – November 2005). Supervise the manufacturing, development, marketing and customer support of instruments for measurement of airborne molecular contamination in semiconductor lithography cleanrooms.

Job responsibilities:

- Continued development of TMB-150 total molecular base monitor. Development of new products for measurement of airborne molecular contamination.
- Management of a group of four people for manufacturing and assembly of electro-mechanical systems, product hardware and software development, customer service, product marketing.
- Product marketing support, sales and technical documentation.
- Project management, business plan development.

Organization: Entegris Inc., GMC and Gas Filtration Business Units within CCS Division.

Job Title: Director of Analytical Services (November 2005 – present).

Job responsibilities:

- Manage a team of five people and operate a small service laboratory providing air, supply gas and materials outgassing measurement services to the semiconductor industry and internal customers.
- Development of new technologies and services
- Product marketing support, technical documentation, customer support
- Operations management, strategic and financial planning, business plan development.
- ISO 17025 accreditation and Lean / Six-Sigma quality and operational focus.
- Development and implementation of a Laboratory Information Management System (LIMS).

5. PUBLICATIONS

5.1. MAJOR PUBLICATIONS

1985

- 1 Jürgen M. Lobert, Diffusion von ^{85m}Kr und ^{131}Xe in Zirkaloy-2, *Diplom Thesis*, Technische Hochschule Darmstadt, Darmstadt, FRG, 1985.

1989

- 2 P.J. Crutzen, W.M. Hao, M.H. Liu, J.M. Lobert and D. Scharffe, Emissions of CO₂ and Other Trace Gases to the Atmosphere From Fires in the Tropics. in: P.J. Crutzen, J.-C. Gerard and R. Zander (eds.), "Our Changing Atmosphere", Proceedings of the 28th Liège International Astrophysical Colloquium, June 26-30, 1989. Universite de Liège, Institut d'Astrophysique, B-4200 Cointe-Ougree.
- 3 Jürgen M. Lobert, Verbrennung pflanzlicher Biomasse als Quelle atmosphärischer Spurengase: Cyanoverbindungen, CO, CO₂ und NO_x, Ph.D. thesis, Johannes Gutenberg Universität, Mainz, FRG, December 1989.

1990

- 4 Jürgen M. Lobert, Dieter H. Scharffe, Wei M. Hao & Paul J. Crutzen, Importance of Biomass Burning in the Atmospheric Budgets of Nitrogen-Containing Gases, *Nature* **346**, 552-554, 1990.

1991

- 5 J.M. Lobert, D.H. Scharffe, W.M. Hao, T.A. Kuhlbusch, R. Seuwen, P. Warneck, and P.J. Crutzen, Experimental Evaluation of Biomass Burning Emissions: Nitrogen and Carbon Containing Compounds, in: J.S. Levine (ed.), "*Global Biomass Burning: Atmospheric, Climatic and Biospheric Implications*", MIT Press, Cambridge, MA, 289-304, 1991.
- 6 Jürgen M. Lobert, Dieter Scharffe, Thomas Kuhlbusch und Paul Crutzen, Experimentelle Bestimmung globaler Spurengasemissionen aus Biomassenverbrennung, in: "*Max Planck Gesellschaft Jahrbuch 1991*" (Almanac of the Max Planck Society 1991), 321-326, 1991.
- 7 W.M. Hao, D. Scharffe, J.M. Lobert and P.J. Crutzen, Emissions of Nitrous Oxide From the Burning of Biomass in an Experimental System, *Geophys. Res. Lett.* 18, 999-1002, 1991.
- 8 Thomas A. Kuhlbusch, Jürgen M. Lobert, Paul J. Crutzen & Peter Warneck, Molecular Nitrogen Emissions From Biomass Burning, a Denitrification Process, *Nature*, 351, 135-137, 1991.

1992

- 9 Günter Helas, Jean Pierre Lacaux, Robert Delmas, Dieter Scharffe, Jürgen Lobert, Johann Goldammer and Meinrat Andreae, Ozone as Biomass Burning Product Over Africa, *Fresenius Environmental Bulletin* 1, 155-160, 1992.
- 10 Montzka S.A.(ed), J.W. Elkins, J.H. Butler, T.M. Thompson, W.T. Sturges, T.H. Swanson, R.C. Myers, T.M. Gilpin, T.J. Baring, S.O. Cummings, G.A. Holcomb, J.M. Lobert, and B.D. Hall, Nitrous Oxide and Halocarbons Division, in: *CMDL No. 20 Summary Report 1991*. E.E. Ferguson and R.M. Rosson (eds), chapter 5, 60-81, 1992. Available from NTIS, 5285 Port Royal Road, Springfield, VA 22161 USA.

1993

- 11 Jürgen M. Lobert and Jürgen Warnatz, Emissions From the Combustion Process in Vegetation, in: P.J. Crutzen and J.G. Goldammer (eds) "*Fire in the Environment: The Ecological, Climatic, and Atmospheric Chemical Importance of Vegetation Fires*", John Wiley & Sons Ltd. Chichester, 15-37, 1993.
- 12 J.-P. Malingreau, F.A. Albin, M.O. Andreae, S. Brown, J.S. Levine, J.M. Lobert, T.A. Kuhlbusch, L. Radke, A. Setzer, P.M. Vitousek, D.E. Ward, and J. Warnatz, Quantification of Fire Characteristics from Local to Global Scales, in: P.J. Crutzen and J.G. Goldammer (eds) "*Fire in the Environment:*

The Ecological, Climatic, and Atmospheric Chemical Importance of Vegetation Fires", John Wiley & Sons Ltd. Chichester, 328-343, 1993.

- 13 Jürgen M. Lobert and Dieter H. Scharffe, Emissionen von Distickstoffmonoxid und Methan aus Biomasseverbrennung in der Bundesrepublik Deutschland. (Emissions of Nitrous Oxide and Methane from Biomass Burning in Germany), in: "*Anthropogenic N₂O and CH₄ Emissions in the Federal Republic of Germany*", Fraunhofer Institute for Systems and Innovation Research, Internal Report # UBA-FB 93 - 10402682 of the Umwelt Bundesamt Berlin, FRG, 1993.
- 14 Swanson T.H.(ed), J.W. Elkins, J.H. Butler, S.A. Montzka, R.C. Myers, T.M. Thompson, T.J. Baring, S.O. Cummings, G.S. Dutton, A.H. Hayden, J.M. Lobert, G.A. Holcomb, W.T. Sturges, and T.M. Gilpin, Nitrous Oxide and Halocarbons Division, in: *CMDL No. 21 Summary Report 1992*. J.T. Peterson and R.M. Rosson (eds), chapter 5, 59-75, 1993. Available from NTIS, 5285 Port Royal Road, Springfield, VA 22161 USA.

1994

- 15 G. Helas, J. Lobert, J. Goldammer, M. O. Andreae, J. P. Lacaux, and R. Delmas, Airborne measurements of biomass burning products over Africa, in: *Ozone in the Troposphere and Stratosphere, Proceedings of the Quadrennial Ozone Symposium 1992*, R. D. Hudson, Editor. NASA, Greenbelt, Md, p. 162-165, 1994.
- 16 Thompson T.M. (ed), J.W. Elkins, J.H. Butler, S.A. Montzka, R.C. Myers, T.J. Baring, S.O. Cummings, G.S. Dutton, J.M. Gilligan, A.H. Hayden, J.M. Lobert, T.H. Swanson, D.F. Hurst, and C.M. Volk, Nitrous Oxide and Halocarbons Division, in: *CMDL No. 22 Summary Report 1993*. J.T. Peterson and R.M. Rosson (eds), chapter 5, 72-91, 1994. Available from NTIS, 5285 Port Royal Road, Springfield, VA 22161 USA.

1995

- 17 Jürgen M. Lobert, James H. Butler, Stephen A. Montzka, Laurie S. Geller, Richard C. Myers, and James W. Elkins, A Net Sink for Atmospheric CH₃Br in the East Pacific Ocean, *Science* 267, 1002-1005, 1995.
- 18 Jürgen M. Lobert, James H. Butler, Thomas J. Baring, Stephen M. Montzka, Richard C. Myers, and James W. Elkins, OAXTC 92: Ocean / Atmosphere EXchange of Trace Compounds 1992: Oceanic Measurements of HCFC-22, CFC-11, CFC-12, CFC-113, CH₃CCl₃, CCl₄, and N₂O in the Marine Air and Surface Waters of the West Pacific Ocean (03. August to 21. October 1992), NOAA Technical Memorandum ERL CMDL-9 (7/1995). Available from NTIS, 5285 Port Royal Road, Springfield, VA 22161 USA.
- 19 James H. Butler, Jürgen M. Lobert, Shari A. Yvon, Laurie S. Geller, The distribution and cycling of halogenated trace gases between atmosphere and ocean, *Ber. Polarforsch.* (Reports on Polar Research) 168, 27-40, 1995.
- 20 Günter Helas, Jürgen Lobert, Dieter Scharffe, Luise Schäfer, Johann Goldammer, Jean Baudet, Brou Ahoua, Ayité-Lô Ajavon, Jean-Pierre Lacaux, Robert Delmas, and Meinrat O. Andreae, Ozone Production Due to Emissions from Vegetation Burning, *J. Atmos. Chem.* 22, 163-174, 1995.
- 21 Delmas, R., J.P. Lacaux, J.C. Menaut, L. Abbadie, X. Leroux, G. Helas, J. Lobert, Nitrogen Compound Emission from Biomass Burning in Tropical African Savanna FOS/DECAFE -1991 Experiment (Lamto, Ivory-Coast), *J. Atmos. Chem.*, 22, 175-193, 1995.
- 22 Günter Helas, Jürgen Lobert, Dieter Scharffe, Luise Schäfer, Johann Goldammer, Jean Baudet, Ayité-Lô Ajavon, Brou Ahoua, Jean-Pierre Lacaux, Robert Delmas, and Meinrat O. Andreae, Airborne measurements of savanna fire emissions and the regional distribution of pyrogenic pollutants over western Africa, *J. Atmos. Chem.* 22, 217, 1995.

1996

- 23 Jürgen M. Lobert, James H. Butler, Laurie S. Geller, Shari A. Yvon, Stephen A. Montzka, Richard C. Myers, Andrew D. Clarke, James W. Elkins, BLAST 94: Bromine Latitudinal Air Sea Transect 1994. Report on Oceanic Measurements of Methyl Bromide and Other Compounds, NOAA Technical Memorandum ERL CMDL-10 (2/1996). Available from NTIS, 5285 Port Royal Road, Springfield, VA 22161 USA.
- 24 J.W. Elkins, D.W. Fahey, J.M. Gilligan, G.S. Dutton, T.J. Baring, C.M. Volk, R.E. Dunn, R.C. Myers, S.A. Montzka, P.R. Wamsley, A.H. Hayden, J.H. Butler, T.M. Thompson, T.H. Swanson, E.J. Dlugokencky, P.C. Novelli, D.F. Hurst, J.M. Lobert, S.J. Ciciora, R.J. McLaughlin, T.L. Thompson, R.H. Winkler, P.J. Fraser, L.P. Steele, and M.P. Lucarelli, Airborne gas chromatograph for in situ measurements of long-lived species in the upper troposphere and lower stratosphere, *Geophys. Res. Lett.* 23, 347-350, 1996.
- 25 J.W. Elkins (ed), J.H. Butler, T.M. Thompson, S.A. Montzka, R.C. Myers, J.M. Lobert, S.A. Yvon, P.R. Wamsley, F.L. Moore, J.M. Gilligan, D.F. Hurst, A.D. Clarke, T.H. Swanson, and C.M. Volk, L.T. Lock, L.S. Geller, G.S. Dutton, R.M. Dunn, M.F. Dicorleto, T.J. Baring, and A.H. Hayden, Nitrous Oxide and Halocompounds, in: *CMDL No. 23 Summary Report 1994-1995*. D.J. Hofmann, J.T. Peterson and R.M. Rosson (eds), chapter 5, 84-111, 1996. Available from NTIS, 5285 Port Royal Road, Springfield, VA 22161 USA.

1997

- 26 Jürgen M. Lobert, Shari A. Yvon, James H. Butler, Stephen A. Montzka, and Richard C. Myers, Undersaturations of Methyl Bromide in the Southern Ocean, *Geophys. Res. Lett.* 24, 171-172, 1997.
- 27 co-author, World Meteorological Organization, Global Atmosphere Watch, Consultation of Experts on Reactive Halogen Compounds and Their Possible Effect on Ozone, Hràdec Kralovè, Czech Republic, 13-16 November 1995, WMO Global Ozone Research and Monitoring Project, Report No. 40, WMO-TD 798.
- 28 Geller, L. S., J.W. Elkins, J.M. Lobert, A.D. Clarke, D.F. Hurst, J.H. Butler and R.C. Myers, Tropospheric SF₆: Observed latitudinal distribution and trends, derived emissions and interhemispheric exchange time, *Geophys. Res. Lett.* 24, 675-678, 1997.

1998

- 29 James H. Butler, Stephen A. Montzka, Andrew D. Clarke, Jürgen M. Lobert, and James W. Elkins, Growth and Distribution of Halons in the Atmosphere, *J. Geophys. Res.* 103, 1503-1511, 1998.
- 30 E. Sanhueza , Y. Dong, D. Scharffe, J.M. Lobert, and P.J. Crutzen, Carbon monoxide uptake by temperate forest soils: the effects of leaves and humus layers, *Tellus* 50B, 51-58, 1998.
- 31 Y. Dong, D. Scharffe, J.M. Lobert, P.J. Crutzen, and E. Sanhueza, Fluxes of CO₂, CH₄, and N₂O from temperate forest soil: the effects of leaves and humus layers, *Tellus* 50B, 243-252, 1998.
- 32 Mark Cogan and Jürgen M. Lobert, Instrumentation For Trace-Level Measurement of Carbon Monoxide in Pristine Environments, Proceedings of the 43rd Annual ISA Analysis Division Symposium, Volume 31, p. 229, ISBN 1-55617-664-3, Instrument Society of America, Research Triangle Park, NC, April 26-29, 1998.
- 33 J.W. Butler (ed), J.H. Elkins, S.A. Montzka, T.M. Thompson, T.H. Swanson, A.D. Clarke, F.L. Moore, D.F. Hurst, P.A. Romashkin, S.A. Yvon-Lewis, J.M. Lobert, M.F. Dicorleto, G.S. Dutton, L.T. Lock, D.B. King, R.E. Dunn, E.A. Ray, M. Pender, P.R. Wamsley, and C.M. Volk, Nitrous Oxide and Halocompounds, in: *CMDL Summary Report No. 24 1996-1997*. D.J. Hofmann, J.T. Peterson and R.M. Rosson (eds), Chapter 5, 91-121 (1998). Available from NTIS, 5285 Port Royal Road, Springfield, VA 22161 USA.

1999

- 34 Jürgen M. Lobert, William C. Keene, Jennifer A. Logan and Rosemarie Yevich, Global Chlorine Emissions from Biomass Burning: Reactive Chlorine Emissions Inventory, *J. Geophys. Res.* 104, 8373-8390, 1999.
- 35 M.A.K. Khalil, R.M. Moore, D.B. Harper, J.M. Lobert, D.J. Erickson, V. Koropalov, W.T. Sturges, and W.C. Keene, Natural Emissions of Chlorine-Containing Gases: Reactive Chlorine Emissions Inventory, *J. Geophys. Res.* 104, 8333-8346, 1999.
- 36 W.C. Keene, M.A.K. Khalil, D.J. Erickson, A. McCulloch, T.E. Graedel, J.M. Lobert, M.L. Aucott, S.-L. Gong, D.B. Harper, G. Kleiman, P. Midgley, R.M. Moore, C. Seuzaret, W.T. Sturges, C.M. Benkovitz, V. Koropalov, L.A. Barrie, and Y.-F. Li, Composite global emissions of reactive chlorine from anthropogenic and natural sources: Reactive Chlorine Emissions Inventory, *J. Geophys. Res.* 104, 8429-8440, 1999.
- 37 S.K. Satheesh, V. Ramanathan, Xu Li-Jones, J.M. Lobert, I.A. Podgorny, J.M. Prospero, B.N. Holben, and N.G. Loeb, A model for the natural and anthropogenic aerosol over the tropical Indian Ocean derived from Indian Ocean Experiment data, *J. Geophys. Res.*, 104, 27421-27440, 1999.

2001

- 38 J. Lelieveld, P. J. Crutzen, V. Ramanathan, M. O. Andreae, C. A. M. Brenninkmeijer, T. Campos, G. R. Cass, R. R. Dickerson, H. Fischer, J. A. de Gouw, A. Hansel, A. Jefferson, D. Kley, A. T. J. de Laat, S. Lal, M. G. Lawrence, J. M. Lobert, O. L. Mayol-Bracero, A. P. Mitra, T. Novakov, S. J. Oltmans, K. A. Prather, T. Reiner, H. Rodhe, H. A. Scheeren, D. Sikka, J. Williams, The Indian Ocean Experiment: Widespread Air Pollution from South and Southeast Asia, *Science*, 291, 1031-1036, 2001.
- 39 Verver, G.H.L., D.R. Sikka, J.M. Lobert, G. Stossmeister, M. Zachariasse, Overview of the meteorological conditions and atmospheric transport processes during the INDOEX 1999, *J. Geophys. Res.*, 106, 28399-28413, 2001.
- 40 Eck, T.F., B.N. Holben, O. Dubovik, A. Smirnov, I. Slutsker, J.M. Lobert, and V. Ramanathan, Column- integrated aerosol optical properties over the Maldives during the northeast monsoon for 1998-2000, *J. Geophys. Res.*, 106, 28555-28566, 2001.
- 41 de Laat, A.T.J., J. Lelieveld, G.J. Roelofs, R.R. Dickerson and J.M. Lobert, Source analysis of carbon monoxide pollution during INDOEX 1999, *J. Geophys. Res.*, 106, 28481-28495, 2001.

2002

- 42 Jürgen M. Lobert and Joyce Harris, Trace gases and air mass origin at Kaashidhoo, Indian Ocean. *J. Geophys. Res.*, 107, 8013-8025, 2002.
- 43 Bell, N.; Hsu, L.; Jacob, D. J.; Schultz, M. G.; Blake, D. R.; Butler, J. H.; King, D. B.; Lobert, J. M.; Maier-Reimer, E., Methyl iodide: Atmospheric budget and use as a tracer of marine convection in global models. *J. Geophys. Res.*, 107, 4340-4352, 2002.

2003

- 44 V. Gros, J. Williams, J. A. van Aardenne, G. Salisbury, R. Hofmann, M. G. Lawrence, R. von Kuhlmann, J. Lelieveld, M. Krol, H. Berresheim, J. M. Lobert, and E. Atlas. Origin of anthropogenic hydrocarbons and halocarbons measured in the summertime european outflow (on Crete in 2001). *Atmos. Chem. Phys.*, 3, 1223-1235, 2003.

2006

- 45 William C. Keene, Jürgen M. Lobert, Paul J. Crutzen, John R. Maben, Dieter H. Scharffe, Tobias Landmann, Christelle Hély, and Conrad Brain. Emissions of major gaseous and particulate species during experimental burns of southern African biomass. *J. Geophys. Res.*, 111, D04301, doi:10.1029/2005JD006319.

2007

- 46 Butler, J. H., D. B. King, J. M. Lobert, S. A. Montzka, S. A. Yvon-Lewis, B. D. Hall, N. J. Warwick, D. J. Mondeel, M. Aydin, and J. W. Elkins (2007), Oceanic distributions and emissions of short-lived halocarbons, *Global Biogeochem. Cycles*, 21, GB1023, doi:10.1029/2006GB002732.

2008

- 47 Jürgen M Lobert and Joseph R. Wildgoose. Optimize semiconductor HVAC filtration through evaluation. *CleanRooms* 22(9), 26-31, 2008.

2009

- 48 Jürgen M Lobert, Charles M Miller, Anatoly Grayfer, Anne M Tivin. Measurement of low molecular weight silicon AMC to protect UV optics in photo-lithography environments. *Proc. of SPIE* Vol. 7272, 727222-1-12 (2009).
- 49 Jürgen M Lobert and Joseph R Wildgoose. Optimizing Semiconductor HVAC Filtration. *Gases & Instrumentation*, 20-23, May/June 2009.

5.2. OTHER PUBLICATIONS

- Jürgen Lobert. Project in Indian Ocean has global implications. *Oceans Watch Column* in: *The San Diego Union-Tribune* daily newspaper, 25 February 1998.
- Mario Aguilera (ed). *Research Highlights - Center for Atmospheric Sciences*, in: Scripps Institution of Oceanography *Explorations* 4 (4), 40-43, 1998.

6. PATENTS

- 1 Anatoly Grayfer, Jürgen Lobert, William Goodwin, Frank Belanger, John Sergi, Mark Phelps. *System and Methods for Detecting Contaminants*. USPTO: WO/2005/057177, International: PCT/US2004/040299.
- 2 William Goodwin, Mark Phelps, Jürgen Lobert, Bruce Laquidara, Anatoly Grayfer. *Method and Apparatus for Improving Measuring Accuracy in Gas Monitoring System*. USPTO Application #: 20060108221, original US filing 10/997043, 24-Nov-2004.

7. EXPERIMENTAL CAMPAIGNS AND FIELD TRIPS

- 1 **AUSTRALIA 89:** Determination of biomass burning emissions from Australian prescribed fires: CO, CO₂, Nitriles and C₁ to C₂ hydrocarbons. 17. March to 05. May 1989, University of Wollongong, Chemistry Dept., N.S.W., Australia.
- 2 **LITTER 90:** Determination of emissions from decomposing forest litter. Measurements of CO, H₂, CO₂, CH₄, N₂O, soil properties and physical parameters in the forest of Darmstadt, FRG. Ongoing, local campaign between October 1990 and August 1991.
- 3 **DECAFE 91:** Airborne measurements and determination of CO₂, CO, H₂, CH₄, N₂O, O₃ and NO₂ emissions from biomass burning above savanna fires during the **Dynamique et Chimie de l' Atmosphere en Foret Equatoriale** experiment 1991 in Cote d'Ivoire, Africa, 07.-23. Jan., 1991.
- 4 **AASE II:** Construction and setup of a gaschromatographic backup-system for stratospheric measurements of CFC 11 and CFC 113 during the second part of the *Airborne Arctic Stratospheric Expedition II* mission, 02.-15. November 1991, Bangor, Maine, USA.
- 5 **OAXTC 92:** *Ocean Atmosphere Exchange of Trace Compounds*. Pacific Ocean cruise on the American research vessel JOHN V. VICKERS. Determination of HCFC-22, CFC-11, CFC-12, CFC-113, methyl chloroform N₂O, and carbon tetrachloride in ocean waters and the atmosphere during a NOAA/CMDL/NOAH project, 03. August to 21. October 1992, Long Beach, Dutch Harbor, Kamchatka, Kwajalein Atoll, Noumea, New Caledonia.
<http://www.esrl.noaa.gov/gmd/hats/ocean/index.html> .
- 6 **BLAST 94:** *Bromine Latitudinal Air/Sea Transect 1994*. Pacific Ocean cruise aboard the American research vessel NOAA SHIP DISCOVERER from Seattle, WA to Punta Arenas, Chile. Determination of methyl bromide and other brominated, chlorinated, and fluorinated compounds to assess the magnitude of the oceanic contribution to the methyl bromide budget. 26. January to 18. February 1994. <http://www.esrl.noaa.gov/gmd/hats/ocean/index.html> .
- 7 **BLAST II:** *Bromine Latitudinal Air/Sea Transect II*. Atlantic Ocean cruise on the German research vessel FS POLARSTERN from Bremerhaven, Germany to Punta Arenas, Chile. Determination of methyl halides and other halogenated compounds in and over the Atlantic Ocean. October 18. to 21. November 1994. <http://www.esrl.noaa.gov/gmd/hats/ocean/index.html> .
- 8 **BLAST III:** Expedition on the ASA vessel NATHANIEL B. PALMER in the South Pacific Ocean from McMurdo, Antarctica to Punta Arenas, Chile. Determination of methyl halides and other halogenated compounds in and over cold and productive ocean waters. 22. February to 07. April 1996. <http://www.esrl.noaa.gov/gmd/hats/ocean/index.html> .
- 9 INDOEX, Site selection trip. Deployment to the Republic of Maldives to locate an appropriate site for the INDOEX ground observatory. Negotiations with locals, resort managers and ministry personnel. Male, Republic of Maldives, 06. to 18. July 1997.
- 10 **INDOEX FFP:** *Indian Ocean Experiment, First Field Phase*. Setup of a permanent climate observatory (KCO) and deployment of long-term instrumentation for trace gases, radiometric and meteorological measurements to Kaashidhoo, Republic of Maldives, 15. January to 26. March 1998. <http://www-indoex.ucsd.edu/observatory/> .
- 11 INDOEX, KCO maintenance trip #1. Breakup of radiometric instruments for recalibration, maintenance of observatory. Kaashidhoo, Republic of Maldives, 31. July to 28. August 1998.
- 12 INDOEX, KCO maintenance trip #2. Redeployment of radiometric instruments, maintenance of instrumentation and amenities, training of new staff and preparation of observatory for upcoming INDOEX intensive campaign. Kaashidhoo, Republic of Maldives, 26 Nov. to 09 Dec. 1998.
- 13 **INDOEX IFP:** *Indian Ocean Experiment, Intensive Field Phase*. Deployment for measurement of trace gases, solar radiation and meteorological parameters & Coordination of Observatory Operations, Kaashidhoo, Republic of Maldives. 02. February to 31. March 1999. <http://www-indoex.ucsd.edu/> .
- 14 **SAFARI 2000:** *Southern AFricAn Regional Science Initiative 2000*. Local biomass burning experiments at the MPI facility using south African bio-fuels. Mainz, Germany, 31. October, 2000 to 18. January, 2001.

8. OTHER PROJECTS

- WMO Expert Meeting on Reactive Halogen Compounds in the Atmosphere, Hradec Králové, Czech Republic, 13-16 November, 1995.
- GEIA/RCEI: invited participant in the *Reactive Chlorine Emissions Inventory* (RCEI) project of the *Global Emissions Inventory Activity* (GEIA) under auspices of the IGBP / International Global Atmospheric Chemistry Project. Group leader of the biomass burning group and active member of the oceanic and biogenic emissions groups (1997-1999).
Established and maintained World Wide Web presence for RCEI at <http://www.geiacenter.org/rcei/> and implemented publications and data for public access.
- SAFARI 2000: collaboration with University of Virginia and Max Planck Institute for Chemistry on emissions from biomass burning. http://jurgenlobert.org/projects/mpi_safari/ (1999-2006).

9. MAJOR PRESENTATIONS, CONFERENCES AND PUBLISHED ABSTRACTS

Numbered entries are those presentations that were actually presented by JML, entries presented by other people are denoted with a dot instead of a number.

- 1 Jürgen M. Lobert, D.H. Scharffe, W.M. Hao, P. Warneck and P.J. Crutzen, Biomass Burning as a Source of Atmospheric Nitrogen Containing Compounds: An Experimental Study, Chapman Conference on Global Biomass Burning: Atmospheric, Climatic and Biospheric Implications, , Williamsburg, VA, USA, 19.-23. March 1990.
 - 2 Jürgen M. Lobert, D.H. Scharffe, W.M. Hao, P. Warneck and P.J. Crutzen, Biomass Burning as a Source of Atmospheric N₂O and NO_x, Invited presentation and abstract at the LNETI/EPA/IFP European Workshop on the Emission of Nitrous Oxide, Lisboa, Portugal, 6.-8. June 1990.
 - 3 Jürgen M. Lobert, D.H. Scharffe, W.M. Hao, P. Warneck and P.J. Crutzen, Biomass Burning as a Source of Atmospheric Nitrogen Containing Compounds: An Experimental Study, presentation and abstract at CACGP 7th International Symposium of the Commission on Atmospheric Chemistry and Global Pollution "Chemistry of the Global Atmosphere", Chamrousse, France, 5.-11. September 1990.
 - 4 Jürgen M. Lobert, Biomass Burning as a Source of Atmospheric Trace Gases, invited presentation at the first Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS I), 13-15 June 1991, M.I.T., MA, USA
 - 5 Jürgen M. Lobert and Paul J. Crutzen, Trace Gas Emissions From Global Biomass Burning: New Estimates, Joint oral presentation at the Gordon Research Conference on Atmospheric Chemistry, New Hampton, NH, USA, 17.-21. June 1991.
 - 6 Jürgen M. Lobert, D.H. Scharffe, G. Helas, P.J. Crutzen, Biomass Burning in Cote d'Ivoire / Africa: Airborne Measurements of CO, CO₂, NO₂, CH₄ and O₃ During DECAFÉ 91, presentation and abstract at the 1991 Fall Meeting of the American Geophysical Union, San Francisco, CA, 9.-13. December, EOS Trans. AGU 72, 85, 1991.
 - 7 H. Bingemer, Jürgen M. Lobert, G. Schebeske, D. Scharffe, M.O. Andreae, P.J. Crutzen, Biomass Burning as a Source of Sulfur to the Atmosphere, presentation and abstract at the 1991 Fall Meeting of the American Geophysical Union, San Francisco, CA, 9.-13. December, EOS Trans. AGU 72, 86, 1991.
- G. Helas, M.O. Andreae, J. Goldammer, J. Lobert, J.P. Lacaux, R. Delmas, Comparison of biomass burning emissions during DECAFÉ 91 / FOS to other field studies, presentation and abstract at the 1991 Fall Meeting of the American Geophysical Union, San Francisco, CA, 9.-13. December, EOS Trans. AGU 72, 85, 1991.

- R.A. Delmas, J.P. Lacaux, L. Abadie, X. Le Roux, J. Lobert, G. Helas, Nitrogen Compounds Emission from Biomass Burning in Tropical African Savanna (FOS/DECAFE 1991 Experiment), presentation and abstract at the 1991 Fall Meeting of the American Geophysical Union, San Francisco, CA, 9.-13. December, EOS Trans. AGU 72, 85, 1991.
- 8 Jürgen M. Lobert and Jürgen Warnatz, Emissions From the Combustion Process in Vegetation, Invited participation and background paper for the Dahlem Workshop on "Fire in the Environment: The Ecological, Climatic, and Atmospheric Chemical Importance of Burning in Wildland and Rural Landscapes" Berlin, FRG, 16.-20. March 1992.
- J.W. Elkins, J.H. Butler, S.M. Montzka, J.M. Lobert, W.T. Sturges, The Impact of the ocean on atmospheric methyl bromide, Proceedings of the Methyl Bromide Science Workshop, Arlington, VA 22202, 2.-3. June 1992, Atmospheric and Environmental Research Inc., 840 Memorial Drive, Cambridge, MA 02139, p. 27, 1992.
- 9 Jürgen M. Lobert, Thomas J. Baring, James H. Butler, and James W. Elkins, OAXTC 1992: Determination of HCFC-22, CFC-11, CFC-12, CFC-113, Methyl Chloroform, Carbon Tetrachloride, and Nitrous Oxide in and Over the Northern and Western Pacific Ocean, *Annales Geophysicae* 11, Suppl. II, Part II, p. C237, 1993. Presentation at the 18. General Assembly of the European Geophysical Society, Wiesbaden, Germany, 3.-7. May 1993.
- 10 Jürgen M. Lobert, Thomas J. Baring, James H. Butler, and James W. Elkins, Ocean/Atmosphere Exchange of Selected Halocarbons and Nitrous Oxide, Challenges in *Atmospheric Chemistry and Global Change: Yesterday, Today and Tomorrow*, Boulder, CO, 2.-4. December 1993.
- 11 J.M. Lobert, J.H. Butler, T.J. Baring, S.A. Montzka, J.W. Elkins. Ocean/atmosphere exchange of trace compounds, 1992: Determination of HCFC-22, other halocarbons, and nitrous oxide in and over the Pacific Ocean. *EOS, Transactions of the American Geophysical Union* 74(43):134. American Geophysical Union Fall Meeting, San Francisco, CA, 6.-10. December 1993.
- Butler, J.H., J.W. Elkins, T.M. Thompson, B.D. Hall, J.M. Lobert, T.H. Swanson, and V. Koropalov. A significant oceanic sink for atmospheric CCl₄. The Oceanography Society, Third Scientific Meeting, Abstracts, p. 55. Seattle, WA, 13.-16. April 1993.
- 12 J.M. Lobert, T.J. Baring, J.H. Butler, S.M. Montzka and J.W. Elkins, Ocean/Atmosphere Exchange of Trace Compounds 1992, Determination of HCFC-22, Other Halocarbons and Nitrous Oxide in and over the Pacific, CIRES Scientific Review, Boulder, CO, 17.-18. March 1994.
- 13 Jürgen M. Lobert, James H. Butler, Laurie S. Geller, Shari A. Yvon, Steven A. Montzka, Richard C. Myers, and James W. Elkins, Methyl halides in the marine air and surface waters of the Pacific and Atlantic Oceans, *EOS, Transactions of the American Geophysical Union* 76 (17):S168, 1995. Presentation at the AGU spring meeting 1995
- 14 J.M. Lobert, J.H. Butler, S.A. Montzka, L.S. Geller, R.C. Myers, and J.W. Elkins. Bromine Latitudinal Air/Sea Transect: An investigation of methyl bromide in the marine air and surface waters of the Pacific and Atlantic Oceans. *EOS, Transactions of the American Geophysical Union* 76 (17):S161, 1995. Invited presentation at the AGU spring meeting 1995, Baltimore, MA , 29. May-02. June 1995.
- Montzka, S.A., J.H. Butler, J.W. Elkins, S. Yvon, A. Clarke, J. Lobert, and L. Lock. Difficulties associated with measuring atmospheric levels of methyl bromide and other methyl halides. *EOS, Transactions of the American Geophysical Union* 76 (17):S160-161, 1995. Presentation at the AGU spring meeting 1995, Baltimore, MA , 29. May-02. June 1995.
- Yvon, S.A., J.H. Butler, J.M. Lobert, and L.S. Geller. Depth profiles of methyl bromide and CFC-12 in the Atlantic Ocean. *EOS, Transactions of the American Geophysical Union* 76 (17):S168, 1995.
- Geller, L., J. Lobert, J. Butler, R. Myers, and J. Elkins. Latitudinal distribution of sulfur hexafluoride in and over the Atlantic and E. Pacific Oceans. *EOS, Transactions of the American Geophysical*

- Union* 76 (17):S168, 1995. Presentation at the AGU spring meeting 1995, Baltimore, MA , 29. May-02. June 1995.
- 15 Jürgen M. Lobert, James H. Butler, Laurie S. Geller, Shari A. Yvon, Steven A. Montzka, Richard C. Myers, and James W. Elkins, Bromine Latitudinal Air/Sea Transect: An Investigation of Methyl Bromide in the Marine air and Surface Waters of the Pacific and Atlantic Oceans, Invited presentation at the *MBGC Methyl Bromide State of the Science Workshop* Monterey, CA, 05.-09. June 1995.
 - 16 J.M. Lobert, J.H. Butler, S.A. Yvon, S.M. Montzka, and J.W. Elkins. Methyl halides in and over the Pacific and Atlantic Oceans. Poster presented at the 1995 *Methyl Bromide State of the Science Workshop*, Monterey, CA, 05.-09. June 1995.
 - Montzka, S., J.H. Butler, J. Lobert, and J. Elkins. Difficulties associated with measuring methyl bromide in the atmosphere and results from global and regional studies. Paper read at *1995 Methyl Bromide State of the Science Workshop*, Monterey, CA, 05.-09. June 1995.
 - Yvon, S.A., J.H. Butler, J.M. Lobert, and J.W. Elkins. Depth profiles of methyl bromide, methyl chloride, and CFC-12 in the Atlantic Ocean. Paper read at *1995 Methyl Bromide State of the Science Workshop*, at Monterey, CA, 05.-09. June 1995.
 - 17 Jürgen M. Lobert, Presentation of oceanic data for selected methyl halides, Invited participation in the WMO Expert Meeting on Reactive Halogen Compounds in the Atmosphere, Hradec Kralove, Czech Republic, 13.-16. November, 1995.
 - 18 J.M. Lobert, J.H. Butler, S.A. Montzka, L.S. Geller, S.A. Yvon, R.C. Myers, and J.W. Elkins. Oceanic emissions and the global budget of methyl chloride. *EOS, Transactions of the American Geophysical Union* 76 (46):F107, 1995. Presentation at the AGU fall meeting, San Francisco, CA, 11.-15. December 1995.
 - Butler, J.H., J.W. Elkins, S.A. Montzka, A.D. Clarke, and J.M. Lobert. Recent distributions and trends of atmospheric halons. *EOS, Transactions of the American Geophysical Union* 76 (46):F98, 1995. Presentation at the AGU fall meeting, San Francisco, CA, 11.-15. December 1995.
 - L.S. Geller, J.H. Butler, J.M. Lobert, J.W. Elkins, R. Myers, T. Thompson, T. Swanson. An Estimation of the Oceanic Source of Nitrous Oxide. *EOS, Transactions of the American Geophysical Union* 76 (46):F107, 1995. Presentation at the AGU fall meeting, San Francisco, CA, 11.-15. December 1995.
 - 19 Jürgen M. Lobert, J.H. Butler, S.A. Yvon, L.S. Geller, S.A. Montzka, J.W. Elkins, *Oceanic Methyl Chloride: Implications for its Global Budget*. *EOS, Transactions of the American Geophysical Union* 77 (46):F120, 1996. Presentation at the AGU Fall Meeting, San Francisco, CA, 15.-19. December 1996.
 - Yvon, S.A., J.H. Butler, S.A. Montzka, J.M. Lobert, A.D. Clarke, and J.W. Elkins. *A comparison of GC/ECD and GC/MS techniques for measuring CH₃Br*. *EOS, Transactions of the American Geophysical Union* 77 (46):F110, 1996. Presentation at the AGU Fall Meeting, San Francisco, CA, 15.-19. December 1996.
 - Andrew D. Clarke , Thomas H. Swanson, Paula R. Wamsley, Fred L. Moore, Shari A. Yvon-Lewis, Jürgen M. Lobert, Laurie S. Geller, Loreen T. Lock, James W. Elkins, James H. Butler, Stephen A. Montzka, Thayne M. Thompson, and Richard C. Myers. *Observations of Ozone Depleting Chemicals from as High as 32 km in the Stratosphere through the Troposphere to Depths as Low as 4 km in the Ocean*. Poster presented at the *1997 CIRES Review, Health of the Atmosphere and Biosphere, Stratospheric Ozone*, Boulder, CO, April 1997.
 - 20 Jürgen M. Lobert, William C. Keene, Jennifer A. Logan, *Global Chlorine Emissions from Biomass Burning: Reactive Chlorine Emissions Inventory*, Presentation at the AGU fall meeting; convener of the special session on Atmospheric Chemistry Inventories, 08.-11. December 1997.

- M.A.K. Khalil, R.M. Moore, D.B. Harper, J.M. Lobert, V.I. Koropalov, W.T. Sturges. *Oceanic and Biogenic Emissions of Chlorine-Containing Gases*. *EOS, Transactions of the American Geophysical Union* 78 (46):F104, 1997. Presentation at the AGU fall meeting, 08.-11. December 1997.
 - W.C. Keene, M.A.K. Khalil, D.J. Erickson, C. Seuzaret, T.E. Graedel, M. Aucott, S.L. Gong, L.A. Barrie, D.B. Harper, G. Kleiman, V.I. Koropalov, J.M. Lobert, J.A. Logan, A. McCulloch, P. Midgley, R.M. Moore, W.T. Sturges. *Composite Global Emissions of Reactive Chlorine From Natural and Anthropogenic Sources: Reactive Chlorine Emissions Inventory*. *EOS, Transactions of the American Geophysical Union* 78 (46):F105, 1997. Presentation at the AGU fall meeting, 08.-11. December 1997.
 - Butler, J.H., J.W. Elkins, J.M. Lobert, S.A. Montzka, and V. Koropalov. *Significant global loss of atmospheric CCl₄ to the ocean*. *EOS, Transactions of the American Geophysical Union* 78 (46):F105, 1997. Presentation at the AGU fall meeting, 08.-11. December 1997.
- 21 Jürgen M. Lobert and V. Ramanathan, INDOEX IFP 98. *Co-chair of surface working group. Meteorological, Cloud and Trace Gas Data from KCO*, Poster presented at the INDOEX Science Workshop, Utrecht, The Netherlands, 20.-23. June 1998.
- 22 Jürgen M. Lobert and V. Ramanathan, *Review of results and status of the Kaashidhoo Climate Observatory, Presentation at the INDOEX Science Meeting, Kurumba, Republic of Maldives, 02.-04. March 1999.*
- S.K. Satheesh, V. Ramanathan, Xu Li-Jones, J.M. Lobert, I.A. Podgorny, J.M. Prospero, B.N. Holben, N.G. Loeb. *An Aerosol Model for the Tropical Indian Ocean During the Northeast Monsoon*. *EOS, Transactions of the American Geophysical Union* 80, S59, 1999. Presentation at the AGU spring meeting 1999, Boston, MA, 1.-4. June, 1999.
 - Butler, J.H., D.B. King, S.A. Yvon-Lewis, J.M. Lobert, S.A. Montzka, and Elkins J.W. *Seasonal and temporal variability in the distribution of methyl bromide in the surface ocean*. Paper read at The 22nd General Assembly of the International Union of Geodesy and Geophysics (IUGG), Birmingham, UK, 18.-30. July 1999.
 - King, D.B., J.H. Butler, J.M. Lobert, S.A. Yvon-Lewis, S.A. Montzka, and J.W. Elkins. *Production and emission of methyl chloride in the surface ocean*. Paper read at The 22nd General Assembly of the International Union of Geodesy and Geophysics (IUGG), Birmingham, UK, 18.-30. July 1999.
- 23 J.M. Lobert, J.M. Harris, V. Ramanathan. *Trace Gases and Air Mass Origin over Kaashidhoo, the Maldives, during 1998/99*. Paper presented at the INDOEX Science Workshop, Utrecht, The Netherlands, 08.-10. September 1999.
- 24 J.M. Lobert, J.M. Harris. *How different were 1998 and 1999? Poster and presentation at the INDOEX Science Workshop, Utrecht, The Netherlands, 08.-10. September 1999.*
- 25 J.M. Lobert, B.J. Johnson, S.J. Oltmans, S.K. Satheesh, J.M. Harris. *Ozone Soundings over Kaashidhoo, the Maldives*. Poster presented at the INDOEX Science Workshop, Utrecht, The Netherlands, 08.-10. September 1999.
- B. Doddridge, R.R. Dickerson, J.M. Lobert, V. Ramanathan. *Surface Ozone at KCO: Interannual Variability, Transport and Photochemistry*. Poster presented at the INDOEX Science Workshop, Utrecht, The Netherlands, 08.-10. September 1999. (Also shown at the AGU Fall Meeting, San Francisco, California, 13.-17. December 1999).
 - B. Gandrud, Teresa van Hove, Andrew Heymsfield, Hal Cole, Randolph Ware, Jürgen M. Lobert, Jay Fein. *KCO precipitable water vapor column measurements from GPS: Comparison of results*. Poster presented at the INDOEX Science Workshop, Utrecht, The Netherlands, 08.-10. September 1999.

- 26 J.M. Lobert, J. Harris, V. Ramanathan. *Trace Gases and Air Mass Transport at KCO during INDOEX 1999*. *EOS, Transactions of the American Geophysical Union (Suppl.)* 80(46), F164, 1999. Presentation at the AGU Fall Meeting, San Francisco, California, 13.-17. December 1999.
- 27 S.J. Oltmans, J.M. Lobert, B.J. Johnson, J.M. Harris, S.K. Satheesh. *Tropospheric Ozone over KCO during the INDOEX IFP 1999*. *EOS, Transactions of the American Geophysical Union (Suppl.)* 80(46), F182, 1999. Presentation at the AGU Fall Meeting, San Francisco, California, 13.-17. December 1999.
- Daniel B. King, James H. Butler, Jürgen M. Lobert, Stephen A. Montzka, James W. Elkins. *Methyl Iodide Supersaturations in the Surface Waters of the Ocean*. *EOS, Transactions of the American Geophysical Union (Suppl.)* 80(49), OS301, 1999. Presentation at the Ocean Sciences Meeting, San Antonio, Texas, 24.-28. January 2000.
- 28 J.M. Lobert. *Trace gas measurements at the Kaashidhoo Climate Observatory*. Invited seminar at NOAA/CMDL, Boulder, CO, 02. March 1999.
- Daniel B. King, James H. Butler, Jürgen M. Lobert, Stephen A. Montzka, Shari A. Yvon-Lewis, and James W. Elkins. *Oceanic Measurements of Halocarbons in support of Flux Calculations and Model Verification*. Presentation at the Surface Ocean Lower Atmosphere Study Conference held in Damp, Germany, 20.-24. February 2000.
- 29 J.M. Lobert. *Methyl halides in the atmosphere: CH₃Cl - a case study*. Invited presentation at Purdue University, Dept. of Earth and Atmospheric Sciences, West Lafayette, Indiana, 15. February 2001.
- 30 J.M. Lobert. *The Maldives: A new location to study long-term climate changes in the Indian Ocean*. Invited presentation at the Woods Hole Oceanographic Institution, Massachusetts, 27. February, 2001.
- 31 J.M. Lobert. *Methyl chloride: a case study for the budgets of atmospheric methyl halides*. Invited presentation at the Woods Hole Oceanographic Institution, Massachusetts, 28. February, 2001.
- C. Jost, D. Sprung, T. Kenntner, M.O. Andreae, J.M. Lobert, W.C. Keene. *Biomass burning emissions of sulfur dioxide, acetonitrile, and acetone: Field measurements and laboratory studies*. Poster presentation at the COACH International Research School on Atmospheric Chemistry, Chemical, physical and biogenic processes in the atmosphere, 05.-16. März 2001 in Obernai, France.
- 32 J.M. Lobert, W.C. Keene, P.J. Crutzen, J.R. Maben, D.H. Scharffe, C. Brain, C. Hely, D. Kayambazinthu. *Methyl Halide Emissions From Experimental Fires With Southern African Biofuels*. *Eos. Trans. AGU*, 82(47), Fall Meet. Suppl., Abstract A41C-08, 2001 Presentation at the AGU Fall Meeting, San Francisco, California, 14.-18. December 2001.
- W.C. Keene, J.M. Lobert, P.J. Crutzen, J.R. Maben, D.H. Scharffe. *Emissions of Volatile Inorganic Halogens, Carboxylic Acids, NH₃, and SO₂ From Experimental Burns of Southern African Biofuels*. *Eos. Trans. AGU*, 82(47), Fall Meet. Suppl., Abstract A51A-0043, 2001. Presentation at the AGU Fall Meeting, San Francisco, California, 14.-18. December 2001.
 - Daniel B. King, James H. Butler, Jürgen M. Lobert, Stephen A. Montzka, and James W. Elkins. *Methyl Iodide Supersaturations in the Surface Waters of the Ocean*. Presentation at the Ocean Sciences Meeting, 9-14 February, 2003.
- 33 Jürgen M Lobert, Robert Reilly and Mark Phelps. *Improved Total Molecular base (TMB) Monitor for Ultra-Sensitive Resist Processes*. Extraction Systems Third Technology Roadmap Meeting, Babson College, Babson Park, MA, 8-9 June, 2003.
- T. Landmann, W.C. Keene, J.M. Lobert, P.J. Crutzen, J.R. Maben. *Improved estimates of pyrogenic emissions in the Kruger National Park (KNP) based on fluxes measured during laboratory burns and fuel loads derived from satellite imagery*. Presentation at the Second Annual Science Networking Meeting. Skukuza, Kruger National Park, 28 March to 02 April, 2004.

- 34 Jürgen M Lobert. "*Cheap and Cheerful*" *Sampling Devices*. Extraction Systems Fourth Technology Roadmap Meeting, Boston, MA, 7-8 June, 2004.
- 35 Jürgen M Lobert and Robert C Petersen. *Lessons From Lithography: Advances in Molecular Contamination Monitoring and Measurement*. Cleanrooms East Conference and Exhibition, Boston, MA, 23-March, 05.
- 36 Jürgen M Lobert. *Gas Monitoring Roadmap for Lithography*. Mykrolis GMC Fifth Technology Roadmap Meeting, La Jolla, CA, 13-14 June, 2005.
- 37 Jürgen M Lobert. *LithoScout Air Sampling and Reporting System*. Semicon West Conference and Exhibit, Technology Innovation Showcase, San Francisco, CA, 14-July, 2005.
- 38 Jürgen M Lobert. *GMC Analytical Services - Activities and Roadmap*. Entegris GMC Fifth Technology Roadmap Meeting, Del Mar, CA, 20-21 June, 2006.
- 39 Jürgen M Lobert and Andrew Rudack. *AMC Sampling Techniques, Applications and Case Studies*. ESTECH 53rd Annual Technical Meeting of IEST, Bloomingdale, IL, 31-May, 2007.
- 40 Jürgen M Lobert. *GMC Analytical Services - Activities and Roadmap*. Entegris GMC Sixth Technology Roadmap Meeting, Temecula, CA, 05-06 June, 2006.
- 41 Jürgen M Lobert. *Low Molecular Weight Silicon Compounds in the Litho-Bay*. Entegris Advanced Photo Seminar, Dresden, Germany, 28-June, 2007.
- 42 Jürgen M Lobert, Joseph Wildgoose, William Goodwin, Chris Quartaro and James Lo. *Optimizing Chemical HVAC Filtration in Semiconductor Process Bays*. Cleanrooms Europe Conference and Exhibition, Stuttgart, Germany, 09-March, 2008.
- 43 Jürgen M Lobert, Joseph Wildgoose, William Goodwin, Chris Quartaro and James Lo. *How to Optimize Chemical HVAC Filtration for Semiconductor Process Bays*. ESTECH IEST, Bloomingdale, IL, 04-07 May 2008.
- 44 Jürgen M Lobert. *Labware WebLIMS 3 Implementation for the Front-End Operation of a Service Lab at Entegris*. Boston LIMS/LI Users Group Meeting, Cary Memorial Library, Boston, MA, 18 March 2009.
- 45 Jürgen M Lobert, Charles M Miller, Anatoly Grayfer, Anne M Tivin. *Measurement of low molecular weight silicon AMC to protect UV optics in photo-lithography environments*. SPIE Advanced Lithography Conference, San Jose, CA, 22-27 February 2009.

10. ADVISORY / TEACHING EXPERIENCE

- * Supervisor for graduate (Diplom) student, 11/88-11/89
- * Supervisor for graduate (Diplom) student 12/89-12/90.
- * Supervisor for undergraduate student, 02-08/95 through CCHE (Colorado Commission for Higher Education) internship.
- * Supervisor for CIRES personnel at NOAA/CMDL/NOAH 06/93 to 12/96.
- * Supervisor for community college instructors during C4-sponsored summer internships.
San Diego Mesa College student (Labview data acquisition programming), 07-08/97;
Grossmont College student (Cloud cover retrieval algorithm for cloud images), 07-08/98.
- * Supervisor for part-time undergraduate student (data processing of INDOEX data sets), 09/98 - 08/99.
- * Instructor and supervisor for the *Kaashidhoo Climate Observatory* personnel in the Republic of Maldives, misc. local personnel (affiliated with the Ministry of Home Affairs, Housing and Environment, MHAHE), 02/1998 to 09/2000.
- * Instructor of engineering and technical personnel at Teledyne Advanced Pollution Instrumentation. February 2001 to April 2003.

- * Manager, Metrology Business Group at Extraction Systems Inc., four group members. August 2003 to 2005.
- * Director, Analytical Services at Entegris, five team members, November 2005 to present.
- * Director, CCS Business Unit Laboratories (Franklin Analytical Services and Billerica Applications and Product Evaluations Labs), 11 team members, January to April 2008.

11. GRANTS AND PROPOSALS

- * NSF grant: *Biomass Burning Emissions Over Southern Africa*, a collaborative project with Paul Crutzen (PI, SIO/UCSD) and William Keene (co-PI, U. Virginia). Total grant amount: \$308k, total grant amount for SIO portion: \$106k. Project timeline: July 2000 to July 2002 with experiments between Oct/2000 and Jan/2001.

12. PROFESSIONAL AFFILIATIONS

- Member of the American Geophysical Union (AGU) since 1990.
- Member of the European Geophysical Society (EGS) 1993-2003.
- Member of The International Society for Optical Engineering (SPIE) 2004-2006.
- Member of the Institute of Environmental Sciences and Technology (IEST) 2007-2009.

13. AWARDS AND RECOGNITIONS

- **NOAA/ERL Outstanding Scientific Paper Award** of the year 1995 (first author) for *Science* **267**, 1002-1005 (1995).
- **NOAA/ERL Outstanding Scientific Paper Award** of the year 1999 (co-author) for *JGR* **103**, 1503-1511 (1998)
- **1999 Editors' Citation for Excellence in Refereeing** for *Geophysical Research Letters*, American Geophysical Union.
- **Nomination for several *Marquis Who Is Who Issues: Science and Engineering***, 4th edition, 1998-99, November 1997; *Who's Who in the World*, 16th edition, October 1998; *Who's Who in America*, 53rd edition, November 1998.; *Who's Who in the West*, 27th edition, November 1998; *Who's Who in America*, Millennium Edition, March 1999.

14. CONTINUED EDUCATION

- SolidWorks 3D CAD Essentials, Digital Dimensions, Inc, San Diego, CA, 09-July-2002.
- SolidWorks Advanced Training, Digital Dimensions, Inc, San Diego, CA, 15-September-2002.
- Semiconductor Processing Technology, SEMI SemiCon West Conference & Exhibit, San Jose, CA, 15-17 July 2003.
- Finance & Accounting for Non-Financial Managers, Boston University Management Development Programs, 2.1 CEU, 03-05 December 2003.
- Strategic Thinking for Organizational Alignment, Boston University Management Development Programs, 0.7 CEU, 16 December 2003.
- 193-nm Lithography, SPIE – The International Society for Optical Engineering, Santa Clara, CA, 0.65 CEU, 22 February 2004.
- 157-nm DUV Lithography, SPIE – The International Society for Optical Engineering, Santa Clara, CA, 0.35 CEU, 22 February 2004.
- Fundamentals of Photochemical Contamination Control for Lithographic Tools, SPIE – The International Society for Optical Engineering, Santa Clara, CA, 0.35 CEU, 23 February 2004.

- Microlithographic Optical Design, SPIE – The International Society for Optical Engineering, Santa Clara, CA, 0.35 CEU, 24 February 2004.
- Managing People for Maximum Performance, Center for Management Research, Cambridge, MA, 29-30 March 2004.
- Strategic Marketing: Concept and Strategies, Boston University Management Development Programs, 1.4 CEU, 08-09 April 2004.
- The Landmark Forum, Landmark Education, Quincy, MA, 29-31 October, 2004.
- The Advanced Course, Landmark Education, Quincy, MA, 27-30 January, 2005.
- Fundamentals of Ion Mobility (IMS) and Ion Mobility Mass Spectrometry (IMMS), 2005 Pittsburgh Conference & Exposition on Analytical Chemistry and Applied Spectroscopy, Orlando, FL, 03 March-2005.
- Managing Multiple Projects, Objectives and Deadlines. SkillPath seminar, Providence, RI, 13-Sep-2005.
- Systems Engineering. Entegris / GMC Seminar. Billerica, MA, 27-28 September, 2005.
- Management Development Programs: Project Time Management. Boston University Corporate Education Center, Braintree, MA, 08-09 November 2005, 1.4 CEU, 14 PDU.
- Statistically Sound Calibration, Detection Limits and Quantitation Limits. Part 1 of 2 - Theory. PITTCON short course, Orlando, FL, 11-Mar-2006.
- Statistically Sound Calibration Studies, Detection Limits and Quantitation Limits. Part 2 of 2 - workshop. PITTCON short course, Orlando, FL, 12-Mar-2006.
- Maximizing the value of the laboratory – Laboratory performance management and improvement, PITTCON Conference & Exposition, 14 March 2006.
- Delegation Bootcamp. AMA course, New York, NY, 05-May-2006.
- Dealing Effectively With Unacceptable Employee Behavior. SkillPath seminar, Worcester, MA, 11-Sep-2006.
- Structured Problem Solving. Lynn Moline Associates, Inc. Entegris GMC seminar, MA, 11-Oct-2006.
- Laboratory Systems Integration (LIMS). CSols Inc. at Pittcon 2007, Chicago, IL, 15-Feb-2007.
- The 7 Habits of Highly Successful People Fundamentals. Franklin Covey, Boston, MA, 21-June-2007.
- Working Smarter: A course in surface analytical techniques. Evans Analytical Group LLC, Massachusetts, 15-Nov-2007.
- LIMS Administrator Training, Labware, Wilmington, DE, 16-21 December, 2007.
- Advanced Configuration Using LIMS Basic. Labware, Franklin, MA, 19-21 Feb, 2008.
- Technical Presentation Skills – Selling Yourself and Your Ideas. PITTCON short course, New Orleans, LA, 04-Mar-2008.
- WebLIMS / WebServices Setup and Integration. Labware, Santa Ana Pueblo, NM. 30-Apr-08.
- Introduction to Labstation. Labware, Santa Ana Pueblo, NM. 01-May-08.
- Troubleshooting LIMS and Crystal Reports. Labware, Santa Ana Pueblo, NM. 02-May-08.