

# Jürgen Michael Lobert

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| Objective                     | To find a long-term, mutually satisfying position to carry out state-of-the-art research and instrument development for atmospheric sciences or environmental control in a well supported team.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Target Position               | <p>Senior Scientist, Research Chemist, Director.</p> <p>Working full-time in a small, motivated team of 4-10 persons on well-funded projects of several months to a few years length with a good support structure (administrative, assistants, work shops, documentation, etc). External, peer review of the work is essential, so are documentation of work done and publication of relevant information in peer-reviewed journals. Laboratory / engineering work, data analysis, travel and publications may take roughly equal, major portions of the work.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Career Level and Availability | Mid-career with more than 20 years of experience. Date of availability is negotiable, three month transition time is preferred. Major relocation is generally considered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Experience                    | <p>05/2003-present <span style="float: right;">Entegris Inc. <span style="float: right;">Franklin, MA</span></span><br/>           Director, Analytical Services</p> <p>Head of a small service laboratory for the semiconductor industry. ISO 17025 quality focus, Lean Six-Sigma restructuring, advancements in competitive offerings.</p> <p style="text-align: right;">Extraction Systems Inc. <span style="float: right;">Franklin, MA</span></p> <p>Manager, Metrology Group</p> <p><b>Projects:</b> Responsible for instrument development, research, documentation and marketing support. Member of executive management.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                               | <p>02/2001-04/2003 <span style="float: right;">Teledyne-Advanced Pollution Instrumentation <span style="float: right;">San Diego, CA</span></span><br/>           Project Engineer, Research Chemist</p> <ul style="list-style-type: none"> <li>▪ <b>Project Title:</b> Responsible for the E-series chemiluminescence NO<sub>x</sub> and O<sub>3</sub> analyzers as well as for APIcom instrument control software, Ethernet interface and other common-platform projects</li> <li>▪ Responsibility for development of the E-series Model 200Ex NO<sub>x</sub> and O<sub>3</sub> analyzers.</li> <li>▪ Design concept, mechanical and electrical layouts, SolidWorks 2003 design work, product design verification, durability, verification and compliance testing.</li> <li>▪ Building prototype instruments, supervising the transition from engineering to manufacturing and the release of the product, staff training.</li> <li>▪ EPA equivalency and CE Mark compliance testing, writing of full documentation, manuals, manufacturing test procedures and data test reports, DCR/DCN document control including BOM structure review and definition, ISO 9001 compliance procedures and documentation.</li> <li>▪ Specification of new developments, organization of task schedules, design review meetings and data reports. Data analysis and publication.</li> <li>▪ Evaluation of new contractors and prospective employees, basic and advanced</li> </ul> |

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|  | <p>training of staff and customers, representation of the company on technical sales shows and meetings, some customer service.</p> <ul style="list-style-type: none"> <li>▪ Driving the development of APIcom instrument control software. Specification and verification of software functionality, usefulness and appearance. Writing manual, help files and installation routines</li> <li>▪ Some development and maintenance for the company's internet website</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  | <p>01/1997-01/2001                      SIO/C4/UCSD                      La Jolla, CA<br/>Associate Project Scientist II</p> <ul style="list-style-type: none"> <li>▪ <b>Project Title:</b> Project Scientist for INDOEX ground-based measurements in the Maldives. Site Scientist for KCO until March 1999 (end of INDOEX).</li> <li>▪ 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).</li> <li>▪ Construction, setup and remote maintenance of trace gas analyzers for CO, CFCs, SF<sub>6</sub> 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).</li> <li>▪ Continued onsite and remote training of Maldivian locals to maintain INDOEX instrumentation.</li> <li>▪ Maintenance trips to the site for check-ups, upgrades and implementation of new instruments.</li> <li>▪ Partial preparation and hosting of scientific meetings.</li> <li>▪ Preparation for INDOEX field experiments and coordination of all scientists participating at KCO.</li> <li>▪ 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.</li> <li>▪ Some world wide web development for the C4 homepage and particularly the KCO observatory website</li> </ul> |
|  | <p>9/1991 - 12/1996                      CIRES/CMDL/NOAA                      Boulder, CO<br/>Research Associate</p> <ul style="list-style-type: none"> <li>▪ <b>Project Title:</b> Determination of halogenated compounds in the sub-ppt to ppm level and N<sub>2</sub>O in air and oceanic waters.</li> <li>▪ Design, layout, 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.</li> <li>▪ Determination of mixing ratios, saturation anomalies and fluxes for the compounds in order to evaluate their possible oceanic sources or sinks.</li> <li>▪ Preparation and participation in three Pacific and one Atlantic research cruises.</li> <li>▪ Design, implementation and maintenance of the World Wide Web representation of the Nitrous Oxide And Halocompounds group (now HATS).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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|  | <p>5/1986 - 8/1991      Max Planck Institute for Chemistry      Mainz, Germany<br/>Ph.D. student and (later) Research Associate</p> <ul style="list-style-type: none"> <li>▪ <b>Project Title:</b> Biomass Burning Laboratory and Field Studies</li> <li>▪ 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.</li> <li>▪ 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.</li> <li>▪ Determination of low molecular weight nitriles (HCN, CH<sub>3</sub>CN, CH<sub>2</sub>CHCN, CH<sub>3</sub>CH<sub>2</sub>CN), CO<sub>2</sub>, CO, NOX, N<sub>2</sub>O, CH<sub>4</sub> in the emissions of burning biomass in the ppt to % concentration range.</li> <li>▪ 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.</li> <li>▪ Preparation and implementation of expeditions to Australia and Africa studying bushfire emissions from airborne derived samples.</li> <li>▪ Working with and training colleagues in the use of personal computers and word processors, spreadsheet and graphics programs as well as data acquisition devices.</li> </ul> |
|  | <p>1/1986 - 4/1986      Hahn Meitner Institute for Nuclear Science      Berlin, Germany<br/>Visiting Scientist</p> <ul style="list-style-type: none"> <li>▪ <b>Project Title:</b> Studies on noble gas clusters.</li> <li>▪ Construction of a magnetic shield for electron spectrometers and participation in synchrotron experiments at the <i>Berliner Elektronen Synchrotron</i> BESSY.</li> <li>▪ Participation in experiments determining gas clusters of 2 to 40 molecular units of Ar, Xe, and SF<sub>6</sub> with time of flight mass spectrometers and synchrotron light as an ionization source.</li> <li>▪ 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.</li> <li>▪ 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<sup>-5</sup> 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.</li> <li>▪ The shield was built and put into operation during the months following my visit.</li> </ul>                                |

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|           | <p>10/1984 - 12/1985      Technical University Darmstadt      Darmstadt, Germany<br/>Graduate Student and (later) Research Assistant</p> <ul style="list-style-type: none"> <li>▪ <b>Project Title:</b> Diffusion of <math>^{135}\text{Xe}</math> and <math>^{85m}\text{Kr}</math> in Zircaloy-2</li> <li>▪ Development of a method for the infusion of Zircaloy-2 metal plates with radioactive noble-gases.</li> <li>▪ Specification, design, and production of Uranium metal plates and irradiation containers</li> <li>▪ Handling of highly radioactive materials</li> <li>▪ Knowledge of security laws and disposal methods for radioactive wastes.</li> <li>▪ 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.</li> <li>▪ Design of a diffusion chamber maintained at temperatures between 1000 and 1400 Kelvin with preceding carrier gas purification.</li> <li>▪ Some administrative responsibilities.</li> </ul> |
| Education | <p>5/1986-2/1990      Johannes Gutenberg University      Mainz, Germany</p> <ul style="list-style-type: none"> <li>▪ Ph.D. Degree in Chemistry with major in Atmospheric Chemistry.</li> <li>▪ Thesis title: <i>Biomassenverbrennung als Quelle Atmosphärischer Spurengase: Cyanoverbindungen, CO, CO<sub>2</sub> und NO<sub>x</sub>.</i><br/>(Biomass Burning as a Source of Atmospheric Trace Gases: Cyanogen Compounds, CO, CO<sub>2</sub> and NO<sub>x</sub>)</li> <li>▪ The degree was awarded for <i>Chemistry</i> with exams in analytical chemistry, physical chemistry/spectroscopy, quantum mechanics and atmospheric chemistry.</li> <li>▪ Ph.D. advisors: Prof. Dr. Peter Warneck and Prof. Dr. Paul J. Crutzen</li> </ul>                                                                                                                                                                                                                                                                                                                         |
|           | <p>10/1979-7/1985      Technical University Darmstadt      Darmstadt, Germany</p> <ul style="list-style-type: none"> <li>▪ German <i>Diplom</i> degree, which is roughly equivalent to an American Master's degree and qualifies the candidate for a Ph.D. career.</li> <li>▪ Thesis title: <i>Diffusion von <math>^{135}\text{Xe}</math> und <math>^{85m}\text{Kr}</math> in Zircaloy-2</i></li> <li>▪ The degree was awarded for the four major disciplines (and faculties) of inorganic, organic, physical chemistry and chemical engineering. The thesis was carried out in Nuclear Chemistry (part of the inorganic chemistry faculty).</li> <li>▪ Advisor: Prof. Dr. Helmut Münzel †</li> </ul>                                                                                                                                                                                                                                                                                                                                                          |
|           | <p>06/1979      Adolf Reichwein Gymnasium      Heusenstamm, Germany</p> <ul style="list-style-type: none"> <li>▪ German high school degree, which is necessary to study at a public University.</li> <li>▪ Majors: Chemistry and English; minors: Biology and Social Studies</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Languages | <ul style="list-style-type: none"> <li>▪ Fluent in written and spoken German (native language).</li> <li>▪ Fluent in written and spoken English.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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| Computer Skills                                   | <ul style="list-style-type: none"><li>▪ Expert knowledge of Windows operating systems</li><li>▪ Expert with a very broad variety of applications for these platforms</li><li>▪ Certified SolidWorks 3D CAD user</li><li>▪ Familiar with Macintosh operating systems; very basic experience of UNIX on HP and IRIX on Silicon Graphics workstations.</li><li>▪ Experienced in Ethernet / TCP/IP networking and Windows system administration. Being an advanced Windows user, I am naturally good at trouble-shooting computers.</li><li>▪ Programming languages: intermediate HTML, basic Java, BASIC and misc. macro languages.</li><li>▪ Labware LIMS implementation and administration as well as LIMSbasic programming.</li></ul> |
| Publications, Presentations and Field Experiments | <ul style="list-style-type: none"><li>▪ Close to 50 mostly peer-reviewed publications in various professional journals including Nature and Science Magazine.</li><li>▪ A 20-year record of public presentations</li><li>▪ Fourteen major field experiments and many international trips to all six continents.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                             |
| Professional Affiliations                         | <ul style="list-style-type: none"><li>▪ Member of the American Geophysical Union, 06/1990 to present.</li><li>▪ Member (irregular) of SPIE, 11/2003 to present.</li><li>▪ Member, IEST, 2007 to present.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |