LIST OF PUBLICATIONS
Marcus Aldén
Archival publications
1 Jan 2016


149. Z.S. Li, M. Rupinski, J. Zetterberg and M. Aldén, Mid-infrared PS and LIF detection of CH4 and C2H6 in cold flows and flames at atmospheric pressure, Comb Inst 30 1629-1636, (2005)


216. Z. W. Sun, Z. S. Li, B. Li, M. Aldén, and P. Ewart, Detection of C2H2 and HCl using mid-infrared degenerate four-wave mixing with stable beam alignment: towards practical in situ sensing of trace molecular species, Appl Phys B. 98, 593-600, 2010


248. R. Wellander, M. Richter and M. Aldén, Time resolved 3D imaging (4D) of two phase flow at a repetition rate of 1 kHz, Opt. Express 19, 21508-21514 (2011)


258. Z. W. Sun, M. Försth, Z. S. Li, B. Li, and M. Aldén, In-situ measurements of HCN in a tube furnace with infrared polarization spectroscopy, Fire and Safety Science, 10, 279(2012)


262. C. Duwig, B. Li, Z. S. Li and M. Aldén, High resolution imaging of flameless and distributed turbulent combustion, Comb. and Flame, 159, 306-3016 (2012)


267. E. Kristensson, E. Berrocal and M. Alden, Quantitative 3D imaging of scattering media using structured illumination and computed tomography, Optics Express. 20, 14437 (2012).


275. J. Duong, R. Wellander, J. Hyvönen, Ö. Andersson, M. Richter, M. Johansson and M. Aldén, High speed combustion imaging in a large bore gas engine, the relationship between pre- and main chamber heat release, ASME, IMCE2013-64286, 2013


278. P. C. Miles, B. Li, Z-S.Li, and M. Aldén, Atmospheric Pressure Acetylene Detection by UV Photo-fragmentation and Induced C₂ Emission, Appl. Sectr. 67, 66 (2013)


311. R. Wellander, M. Richter, and M. Aldcn, Time resolved (kHz) 3D imaging of OH PLIF in a flame, Exp. In Fluids, 55, 1-12,( 2014).


329. H. Carlsson, E. Nordström; A. Bohlin, Y. Wu; B. Zhou; Z. S. Li; M. Aldén; P.-E. Bengtsson and; X. S. Bai, Numerical and Experimental study of Flame Propagation and Quenching of Lean Premixed Turbulent Low Swirl Flames at Different Reynolds Numbers, Comb. and Flame, 162, 2582 (2015).


335. A. Subash, R. Whiddon, A. Kundu, R. Collin, J. Klingmann, M. Aldén, Flame investigation of a gas turbine central pilot burner at atmospheric pressure conditions using OH PLIF and high speed chemiluminiscence imaging, ASME GTINDIA2015-1212


340. Z. M. Li, J. Rosell, X. S. Bai; M. Richter, M. Aldén, High speed multiple species imaging in a methane/air jet flame to investigate flame local quenching and healing, Submitted for publication 2015.

342. B. Zhou, C. Brackmann, Z. S. Li, M. Aldén and X. S. Bai, Multi-scalar imaging of small-scale structures in turbulent premixed flames from flamelet to distributed reactions, Submitted for publication 2015.


344. J. J. Zhu, J. L. Gao, A. Ehan, M. Aldén, Z. S. Li, A. Larsson and Y. Kusano, Spatio-spatially resolved characteristics of a gliding arc discharge in a turbulent air flow at atmospheric pressure, Submitted for publication 2015

345. F. ABou Nada, C. Knappe, M. Richter and M. Aldén, Systematic signal perturbations in the detection of luminiscence decays times orginating from thermographic phosphors, Submitted for publication 2015.


349. A.-L. Sahlberg, D. Hot, M. Aldén and Z. S. Li, Non-intrusive, in situ detection of ammonia in hot gas flows with mid-infrared degenerate four-wave mixing at 2.3 μm, Submitted for publication, 2015

Conference contributions


63. M. Aldén, "Förbränningsdiagnostik utnyttjande laserteknik - Grundforskning och tillämpning", Paper presented at FÖRPEX, CTH, Göteborg, November 4-6, 1992
80. P.-E Bengtsson and M. Aldén, "Soot volume Fraction Imaging using Laser Techniques; Laser-Induced Fluorescence in C2 from Laser-Vaporized Soot"
(LIF(C2)LVS, and Laser-Induced Soot Incandescence (LII), Rouen, December 5-7 1993


85. L. Martinsson, P.-E Bengtsson and M. Aldén, "On the possibility to measure temperatures and oxygen concentrations using dual broadband rotational CARS, with a relative standard deviation of single-shot values only limited by detector noise", Abstract for paper at XIII European CARS Workshop, Paris, France, March 21-22 1994


36
95. P.-E Bengtsson and M. Aldén, "2-D imaging of soot volume fraction using Laser-Induced Fluorescence in C₂ from Laser-Vaporised Soot (LIF(C₂) LVS)" Poster presented at 25th Int Symp on combustion, Irvine, CA, USA, 1994
96. T. Berglind, A. Saizkoff, R. Reinmann and M. Aldén, "Characterization on the early stages of spark ignition and flame development", Periodic Report IDEA EFFECT JOU2-CT92-0162, 9401-9406


112. F. Ossler, S. Agrup and M. Aldén, "Picosecond laser based studies applied to combustion and flow phenomena", Poster presented at Gordon Conf, Plymouth, NH, USA, 1995

113. R. Reinmann, A. Saitzkoff, M. Akram, T. Berglind and M. Aldén, "IDEA EFFECT, Characterization of the early stages of spark ignition and flame development", Contract JOU2-CT92-0162, Periodic report 950101-950630 Presented at Warwick University, Coventry, GB


120. N. Georgiev and M. Aldén, "Two-dimensional imaging of flame-species using two-photon LIF”, Paper presented at 26th Symp on Comb (Int) Funchal, Madeira, April 1-4 1996

121. N. Georgiev and M. Aldén, "2D multiphoton multispecies imaging of combustion species”, Paper presented at 26th Symp on Comb (Int) Funchal, Madeira, April 1-4 1996


127. C. Löfström, H. Kaaling and M. Aldén, "Visualization of fuel distributions in premix ducts to a low-emission gas turbine combustor using laser techniques”, Paper presented at 26th Symp on Comb (Int) Funchal, Madeira, April 1-4 1996


138. F. Ossler and M. Aldén, "Picosecond laser based studies applied to combustion", Paper presented at Int Workshop on Molecular Energy Transfer in Small Radicals, Bielefeld, Germany, March 4-5 1997


combustion processes”, Poster presented at 27th Int Symp on Combustion, Univ of Colorado, Boulder, CO, USA, Aug 2-7 1998


Comparisons with Numerical Analysis”, SAE International Fall Meeting, Toronto, Canada, Oct 1999


162. T. Metz, F. Ossler and M. Aldén, “Spectroscopic and time-resolved investigation of pico-second laser-induced fluorescence from polycyclic aromatic hydrocarbons at elevated temperatures”, Physikertagung (Deutsche Physikalische Gesellschaft), Heidelberg 1999


165. F. Ossler, T. Metz and M. Aldén, “Picosecond laser-induced fluorescence from gas-phase polycyclic aromatic hydrocarbons at elevated temperatures”, IEA-TLM, OhTSU, Japan Sept 26-29, 1999


174. F. Ossler, T. Metz, M. Aldén, "Optical in-sity characterization of gas phase polycyclic aromatic hydrocarbons at elevated temperatures by picosecond laser-


185. J. Zetterberg, Z.S. Li, M. Afzelius and M. Aldén, “Two-dimensional temperature measurements in flames using filtered Rayleigh scattering at 254 nm”, Joint Meeting of Scandinavian-Nordic and Italian Sections of the Combustion Institute, Ischia Italy september 2003


201. M. Linvin, Z.S. Li, J. Zetterberg and M. Aldén, “Mid-infrared polarization spectroscopy of hydrocarbons and polyatomic molecules in flows and flames”, First Baltic Combustion Meeting 2005


illumination: Applications for spray diagnostics, Topical meeting on Measurement Techniques in Combustion within the Scandinavian-Nordic Section of the Combustion Institute, Gothenburg, October 23-24, 2008


Z.-W. Sun, M. Försth, Z. S. Li, * B. Li and M. Aldén, In situ detection of HCN and HCl as products from burning polymers with spatially resolved mid-infrared polarization spectroscopy (IRPS), European Combustion Meeting 14th April, 2009, Vienna.


Bo Li, Yu Li, Zhihua Wang, Zhongshan Li, Zhiwei Sun, Marcus Aldén, A novel multi-jet quartz burner for laminar near-adiabatic flames: Standard of temperatures for the calibration of laser diagnostics techniques, European Combustion Meeting 14th April, 2009, Vienna.


Z.-W. Sun, Z. S. Li, B. Li, and M. Aldén, Detection of C2H2 and HCl using mid-infrared degenerated four-wave mixing with a novel beam arrangements: Towards practical in situ trace molecular species sensing, European Combustion Meeting 14th April, 2009, Vienna.


240. Z.W. Sun, N. Dam, Z.S. Li, M. Aldén NCN detection in atmospheric flames, Paper presented at the Joint Scandinavian-French Section of the Combustion Institute, Snekkersten, Nov. 2009
248. Johannes Kiefer, Zhongshan Li, Marcus Aldén: Multiplex Laser-Induced Fluorescence for Two-Dimensional Flame Front Visualization: Opportunities and Challenges, 14-17 August, GRC poster 2009.
250. Zhongshan Li, Zhiwei Sun, Bo Li and Marcus Aldén: Mid-infrared polarization spectroscopy and degenerate 4-wave mixing for detection at trace level of key species in combustion related processes, 14-17 August, GRC poster 2009.
253. Z.W. Sun, Z.S. Li, M. Aldén, Mid-infrared degenerate four-wave mixing for molecular concentration and temperature measurements in combustion


R. Wellander, M. Richter, M. Aldén, High speed 3D imaging of two phase flows, Work in progress poster presentation at the 34th International Symposium on Combustion, Warzawa 2012.


Z.W. Sun, Z.S. Li, B. Zhou, B. Li, Susan Lindenkrantz, H. Nilsson and M. Aldén, High resolution emission spectroscopy in 1800 -600 cm⁻¹ from one dimension laminar CH₄/O₂/N₂ lean and rich flames, Work in progress poster presentation at the 34th International Symposium on Combustion, Warzawa 2012.


318. B. Zhou, Z. S. Li, C. Brackmann and M. Aldén, Development of single-shot CN PLIF imaging in premixed turbulent flames using an Alexandrite laser system,


332. P. Joo, Z. S. Li, and M. Aldén, Design of high pressure experimental apparatus with optical access for combustion experiments, paper presented at the joint British-Scandinavian meeting of the Combustion Institute, Cambridge, April 2014.


347. Lasse Høgstedt, Jeppe Seidelin Dam, Anna-Lena Sahlberg, Zhongshan Li, Marcus Aldén, Christian Pedersen, Peter Tidemand-Lichtenberg, Upconversion enhanced degenerate four-wave mixing in the mid-infrared for sensitive detection of acetylene in gas flows, SPIE LASER, 89641H-89641H-6, 2014

348. J. Bood and M. Aldén, Experiments on deep-UV two-photon pumping of fluorescence and stimulated emission in oxygen and nitrogen atoms in flames, Contribution to CLEO-2015


Invited talks (selected)


6. Industrial Applications of CARS Spectroscopy", Invited contribution to special session on "Industrial applications of Raman spectroscopy" The XI'th Int. Conf. on Raman Spectroscopy, London 1988


9. Combustion Diagnostics with Lasers, IQEC'92, Vienna, Austria, June 14-19 1992


11. Applications of Laser-Induced Fluorescence and CARS for Combustion Diagnostics, M Aldén, P-E Bengtsson, C Löfström and H Neij, , Deutsche Bunsengesellschaft f Physikalische Chemie Meeting on Laser Diagnostics for Industrial Processes, Heidelberg, Germany, June 28-July 1 1993


15. Applications and Developments of Laser Spectroscopic Techniques for Combustion Diagnostics, Nordic Seminar on Gas Analysis in Combustion, Tampere, Finland October 4-5 1994


17. Investigation of NO detection in flames using Polarization Spectroscopy, Paper presented at XIV European CARS Workshop ECW'95, El Escorial, Spain, March 29-31 1995

18. Two Photon Degenerate Four Wave Mixing Spectroscopy of Molecular Nitrogen, XV European CARS Workshop, Sheffield, UK, March 27-28 1996


20. Laserdiagnostiska tekniker för studier av förbränningsproces sen, SVEA Förbränningsmotorn i takt med tiden?!, Scania, Södertälje, 21 nov, 1996


22. ERCOF TAC Summerschool, Aachen Germany, Sept 14-17, 1997


29. Development of laser techniques for applications in combustion engines, Haus der Technik, Essen, Germany, Sept 26, 2000


35. Combustion at the focus: laser diagnostics and control, K. Kohse-Höinghaus, R. S. Barlow, M. Aldén and J. Wolfrum, “Invited talk at the 30th Comb Inst Symposium, 2004

36. Challenges for IC engines diagnostics using laser techniques, Clean I.C Engines and Fuels, Louvain-la Neuve, Belgium, April 7th 2005.


39. Development and applications of laser spectroscopic techniques related to combustion diagnostics, 2nd ICOLAD, London Sept. 12-14, 2005,


41. Laser diagnostics on unsteady flames”, FLUISTCOM, Delft 20 jan, 2006


43. Multiple-parameter visualization in combustion using laser diagnostic techniques, 5th World Congress on Industrial Process Tomography Bergen, Sept. 3-6, 2007


47. Developments and applications of Laser Techniques for Combustion Studies, Plenary lecture at the European Combustion Meeting, Wien 09,


50. Development and application of laser diagnostic techniques for combustion studies, Annual meeting of Finnish National Committee of IFRF, Helsinki, January 14th, 2010

51. Förbränningens fysik och optiska forskningsmetoder, Teknikens dag, Helsingfors 2010

52. Visualization and understanding of combustion processes using spatially and temporally resolved laser diagnostic techniques; Plenary Lecture at the 33rd Symp (Int.) on Combustion, Beijing 2010

53. Recent developments in laser diagnostics of combustion processes, Danish Optical Society, Risö, 2010

54. Recent developments in laser diagnostics, JM Burger course, Eindhoven, 2010

55. Coordinated Swedish combustion research within CECOST and Lase diagnostics of unsteady combustion processes, NORDITA, Stockholm 2010


57. Lecture at the FLOW Centre Annual meeting, Stockholm 2011- Trends in Combustion Research

58. Laser Diagnostics of Combustion research, Ten invited lectures at the Princeton CEFRC Summer School, 2011


64. Laser diagnostics in Combustion, Fifteen invited lectures at the Tsinghua Summer School, Beijing, 213

65. Laser diagnostics in Combustion, Four Invited lectures at the Tianjin University Summer School 2013,


67. Lasers in Combustion: Tools or Toys, Invited talk at the 8th Mediterranean Combustion Symposium, Izmir Turkey, Sept 2013


69. J. Bood and M. Aldén, Experiments on deep-UV two-photon pumping of fluorescence and stimulated emission in oxygen and nitrogen atoms in flames, invited talk at CLEO 2015

70. Development and application of laser diagnostic techniques for studies of turbulent and high pressure combustion, Invited talk at the High–Pressure High Reynolds Combustion Workshop, Clean Combustion Research Center, KAUST, March 24-26, 2015

71. Development and application of laser-techniques for combustion studies, Plenary talk at the Nordic Flame Days, Copenhagen 5-6 Oct. 2015

Miscellaneous: (Investigations, reports, travel reports, etc)


17. M. Aldén m.fl, "Combustion Centre, Biennial report 1988-90".

18. M. Aldén m fl, "Combustion Centre", Information brochure 1991

19. M. Aldén m fl, "Combustion Centre, Biennial report 1990-92"


22. R. Fritzon and M. Aldén, Visualization of the mixing in interacting turbulent shearlayers through use of planar laser-induced fluorescence, LRCP-20, Lund Reports on combustion Physics 1996


