

# Journal Papers (Excerpt)

## 2023

Tchoupe Sambou, Elio; Lauwers, Daniel; Herrig, Tim; Klink, Andreas; Meinke, Matthias; Klaas, Michael; Schröder, Wolfgang - "Optical in Situ Analysis of Gas Bubble Evolution in Electrochemical Machining Based on Similarity Theory Using Particle Image Velocimetry" - Procedia CIRP - vol 117 content/page 257-262

Tchoupe Sambou, Elio; Lauwers, Daniel; Heidemanns, Lukas Franz; Herrig, Tim; Klink, Andreas; Meinke, Matthias; Klaas, Michael; Schröder, Wolfgang - "Optical in Situ Analysis of Gas Bubble Evolution in Electrochemical Machining Based on Similarity Theory Using Particle Image Velocimetry" - Procedia CIRP - vol 117 content/page 257-262 - [doi:10.1016/j.procir.2023.03.044](https://doi.org/10.1016/j.procir.2023.03.044)

## 2022

Tchoupe Sambou, Elio; Heidemanns, Lukas Franz; Klink, Andreas; Herrig, Tim; Klaas, Michael; Lauwers, Daniel; Schröder, Wolfgang - "Experimental setup for the investigation of the transport of different gas bubble sizes during electrochemical machining based on similarity theory using particle image velocimetry" - Procedia CIRP - vol 113 content/page 417-421 - [doi:10.1016/j.procir.2022.09.193](https://doi.org/10.1016/j.procir.2022.09.193)

Schier, Christina; Foerster, Jana; Heupel, Monika; Dörner, Philipp-Karim; Klaas, Michael; Schröder, Wolfgang; Rink, Lothar; Slusarenko, Alan; Gruhlke, Martin C. H. - "Allicin as a Volatile or Nebulisable Antimycotic for the Treatment of Pulmonary Mycoses : In Vitro Studies Using a Lung Flow Test Rig" - International journal of molecular sciences - vol 23 no 12 content/page 6607 - [doi:10.3390/ijms23126607](https://doi.org/10.3390/ijms23126607)

## 2021

Braun, Marco; Klaas, Michael; Schröder, Wolfgang - "Analysis of Cyclic Variation Using Time-Resolved Tomographic Particle-Image Velocimetry" - SAE Powertrains, Fuels & Lubricants Meeting - vol 3 no 1 content/page 113-136 - [doi:10.4271/2020-01-2021](https://doi.org/10.4271/2020-01-2021)

Dörner, Philipp-Karim; Schröder, Wolfgang; Klaas, Michael - "Experimental quantification of oscillating flow in finite-length straight elastic vessels for Newtonian and non-Newtonian fluids" - European journal of mechanics / B - vol 87 content/page 180-195 - [doi:10.1016/j.euromechflu.2021.02.001](https://doi.org/10.1016/j.euromechflu.2021.02.001)

Feldhusen-Hoffmann, Antje; Lagemann, Christian; Loosen, Simon André; Meysonnat, Pascal; Klaas, Michael; Schröder, Wolfgang - "Analysis of transonic buffet using dynamic mode decomposition" - Experiments in fluids - vol 62 no 4 content/page 66 - [doi:10.1007/s00348-020-03111-5](https://doi.org/10.1007/s00348-020-03111-5)

## 2020

Mäteling, Esther; Klaas, Michael; Schröder, Wolfgang - "Detection of small-scale/large-scale interactions in turbulent wall-bounded flows" - Physical review fluids - vol 5 no 11 content/page 114610 - [doi:10.1103/PhysRevFluids.5.114610](https://doi.org/10.1103/PhysRevFluids.5.114610)

Marquardt, Pascal; Klaas, Michael; Schröder, Wolfgang - "Experimental investigation of the turbulent Schmidt number in supersonic film cooling with shock interaction" - Experiments in fluids - vol 61 no 7 content/page 160 - [doi:10.1007/s00348-020-02983-x](https://doi.org/10.1007/s00348-020-02983-x)

Mäteling, Esther; Klaas, Michael; Schröder, Wolfgang - "Simultaneous Stereo PIV and MPS3 Wall-Shear Stress Measurements in Turbulent Channel Flow" - Optics - vol 1 no 1 content/page 40-51 - [doi:10.3390/opt1010004](https://doi.org/10.3390/opt1010004)

Marquardt, Pascal; Klaas, Michael; Schröder, Wolfgang - "Comparison of Shock/Cooling-Film Interaction for Cooled and Isoenergetic Injection" - AIAA journal - vol 58 no 5 content/page 2078-2092 - [doi:10.2514/1.j058471](https://doi.org/10.2514/1.j058471)

Li, Wenfeng; Roggenkamp, Dorothee; Paakkari, Ville; Klaas, Michael; Soria, Julio; Schröder, Wolfgang - "Analysis of a drag reduced flat plate turbulent boundary layer via uniform momentum zones" - Aerospace science and technology - vol 96 content/page 105552 - [doi:10.1016/j.ast.2019.105552](https://doi.org/10.1016/j.ast.2019.105552)

Reiter, Jana; Borlinghaus, Jan; Dörner, Philipp-Karim; Schröder, Wolfgang; Gruhlke, Martin C. H.; Klaas, Michael; Slusarenko, Alan - "Investigation of the deposition behaviour and antibacterial effectivity of allicin aerosols and vapour using a lung model" - Experimental and Therapeutic Medicine - vol 19 no 2 content/page 1541-1549 - [doi:10.3892/etm.2019.8387](https://doi.org/10.3892/etm.2019.8387)

## 2019

Braun, Marco; Klaas, Michael; Schröder, Wolfgang - "High-speed 3D Measurements of the Influence of Intake Pressure on the In-Cylinder Flow in a DISI Engine" - SAE technical paper - vol 2019-01-2251 content/page 13 Seiten - [doi:10.4271/2019-01-2251](https://doi.org/10.4271/2019-01-2251)

Marquardt, Pascal; Klaas, Michael; Schröder, Wolfgang - "Experimental Investigation of Isoenergetic Film-Cooling Flows with Shock Interaction" - AIAA journal - vol 57 no 9 content/page 3910-3923 - [doi:10.2514/1.j058197](https://doi.org/10.2514/1.j058197)

Braun, Marco; Schröder, Wolfgang; Klaas, Michael - "High-speed tomographic PIV measurements in a DISI engine" - Experiments in fluids - vol 60 no 9 content/page 146 - [doi:10.1007/s00348-019-2792-4](https://doi.org/10.1007/s00348-019-2792-4)

Liu, Yiou; Klaas, Michael; Schröder, Wolfgang - "Measurements of the wall-shear stress distribution in turbulent channel flow using the micro-pillar shear stress sensor MPS3" - Experimental thermal and fluid science - vol 106 content/page 171-182 - [doi:10.1016/j.expthermflusci.2019.04.022](https://doi.org/10.1016/j.expthermflusci.2019.04.022)

Roggenkamp, Dorothee; Li, Wenfeng; Klaas, Michael; Schröder, Wolfgang - "Influence of spanwise transversal surface wave on coherent structures in turbulent boundary layers" - Aerospace science and technology - vol 86 content/page 387-400 - [doi:10.1016/j.ast.2019.01.026](https://doi.org/10.1016/j.ast.2019.01.026)

## 2018

Deshmukh, Abhishek Yashwant; Falkenstein, Tobias; Pitsch, Heinz; Khosravi, Maziar; van Bebbler, David; Klaas, Michael; Schröder, Wolfgang - "Numerical Investigation of Direct Gas Injection in an Optical Internal Combustion Engine" - WCX World Congress Experience - vol 11 no 6 content/page 1447-1478 - [doi:10.4271/2018-01-0171](https://doi.org/10.4271/2018-01-0171)

Braun, Marco; Klaas, Michael; Schröder, Wolfgang - "Influence of Miller Cycles on Engine Air Flow" - SAE International journal of engines - vol 11 no 2 content/page 161-178 - [doi:10.4271/03-11-02-0011](https://doi.org/10.4271/03-11-02-0011)

Li, Wenfeng; Roggenkamp, Dorothee; Hecken, Tobias; Jessen, Wilhelm; Klaas, Michael; Schröder, Wolfgang - "Parametric investigation of friction drag reduction in turbulent flow over a flexible wall undergoing spanwise transversal traveling waves" - Experiments in fluids - vol 59 no 6 content/page 105 - [doi:10.1007/s00348-018-2559-3](https://doi.org/10.1007/s00348-018-2559-3)

Feldhusen, Antje; Statnikov, Vladimir; Klaas, Michael; Schröder, Wolfgang - "Investigation of shock-acoustic-wave interaction in transonic flow" - Experiments in fluids - vol 59 no 1 content/page 15 - [doi:10.1007/s00348-017-2466-z](https://doi.org/10.1007/s00348-017-2466-z)

## 2017

Braun, Marco; Palmer, Johannes; van Overbrüggen, Timo; Klaas, Michael; Kneer, Reinhold; Schröder, Wolfgang - "Influence of In-Cylinder Air Flow on Spray Propagation" - SAE International journal of engines - vol 10 no 4 content/page 1398-1410 - [doi:10.4271/2017-01-9280](https://doi.org/10.4271/2017-01-9280)

Rubbert, Ernst Rolf Alexander; Hennig, F.; Klaas, Michael; Pitsch, Heinz; Schröder, Wolfgang; Peters, N. - "Streamline segment scaling behavior in a turbulent wavy channel flow" - Experiments in fluids - vol 58 no 2 content/page 10 - [doi:10.1007/s00348-016-2291-9](https://doi.org/10.1007/s00348-016-2291-9)

## 2016

Li, Wenfeng; Roggenkamp, Dorothee; Jessen, Wilhelm; Klaas, Michael; Schröder, Wolfgang - "Reynolds number effects on the fluctuating velocity distribution in wall-bounded shear layers" - Measurement science and technology - vol 28 no 1 content/page 015302 - [doi:10.1088/1361-6501/aa4e9e](https://doi.org/10.1088/1361-6501/aa4e9e)

Wagner, Hermann; Weger, Matthias; Klaas, Michael; Schröder, Wolfgang - "Features of owl wings that promote silent flight" - Interface focus - vol 7 no 1 content/page 20160078 - [doi:10.1098/rsfs.2016.0078](https://doi.org/10.1098/rsfs.2016.0078)

van Overbrüggen, Timo; Klaas, Michael; Soria, Julio; Schröder, Wolfgang - "Experimental analysis of particle sizes for PIV measurements" - Measurement science and technology - vol 27 no 9 content/page 094009 - [doi:10.1088/0957-0233/27/9/094009](https://doi.org/10.1088/0957-0233/27/9/094009)

van Overbrüggen, Timo; Braun, Marco; Klaas, Michael; Schröder, Wolfgang - "Experimental Analysis of the Impact of Injected Biofuels on In-Cylinder Flow Structures" - SAE International journal of engines - vol 9 no 2 content/page 2016-01-9043 - [doi:10.4271/2016-01-9043](https://doi.org/10.4271/2016-01-9043)

## 2015

Roggenkamp, Dorothee; Jessen, Wilhelm; Li, Wenfeng; Klaas, Michael; Schröder, Wolfgang - "Experimental investigation of turbulent boundary layers over transversal moving surfaces" - CEAS Aeronautical Journal - vol 6 no 3 content/page 471-484 -

[doi:10.1007/s13272-015-0155-2](https://doi.org/10.1007/s13272-015-0155-2)

van Overbrüggen, Timo; Klaas, Michael; Bahl, Björn; Schröder, Wolfgang - "Tomographic Particle-Image Velocimetry Analysis of In-Cylinder Flows" - SAE International journal of engines - vol 8 no 3 content/page 1447-1467 - [doi:10.4271/2015-01-9042](https://doi.org/10.4271/2015-01-9042)

Schlanstein, Peter C.; Hesselmann, Felix; Jansen, Sebastian; Gemsa, Jeannine; Kaufmann, Tim A.; Klaas, Michael; Roggenkamp, Dorothee; Schröder, Wolfgang; Schmitz-Rode, Thomas; Steinseifer, Ulrich; Arens, Jutta - "Particle Image Velocimetry Used to Qualitatively Validate Computational Fluid Dynamic Simulations in an Oxygenator: A Proof of Concept" - Cardiovascular engineering and technology - vol 6 no 3 content/page 340-351 - [doi:10.1007/s13239-015-0213-2](https://doi.org/10.1007/s13239-015-0213-2)

Li, Wing Jin; Jessen, Wilhelm; Roggenkamp, Dorothee; Klaas, Michael; Silex, W.; Schiek, M.; Schröder, Wolfgang - "Turbulent drag reduction by spanwise traveling ribbed surface waves" - European journal of mechanics / B - vol 53 content/page 101-112 - [doi:10.1016/j.euromechflu.2015.03.009](https://doi.org/10.1016/j.euromechflu.2015.03.009)

Pielhop, Kai; Klaas, Michael; Schröder, Wolfgang - "Experimental analysis of the fluid-structure interaction in finite-length straight elastic vessels" - European journal of mechanics / B - vol 50 content/page 71-88 - [doi:10.1016/j.euromechflu.2014.11.001](https://doi.org/10.1016/j.euromechflu.2014.11.001)

Winzen, A.; Klaas, Michael; Schröder, Wolfgang - "High-Speed Particle Image Velocimetry and Force Measurements of Bio-Inspired Surfaces" - Journal of aircraft - vol 52 no 2 content/page 471-485 - [doi:10.2514/1.C032742](https://doi.org/10.2514/1.C032742)

## 2014

Pielhop, Kai; Schmidt, Carmen; Zholtovski, Stefan; Klaas, Michael; Schröder, Wolfgang - "Experimental investigation of the fluid-structure interaction in an elastic 180 degrees curved vessel at laminar oscillating flow" - Experiments in fluids - vol 55 no 10 content/page 1816 - [doi:10.1007/s00348-014-1816-3](https://doi.org/10.1007/s00348-014-1816-3)

Winzen, Andrea; Roidl, Benedikt; Klän, Stephan; Klaas, Michael; Schröder, Wolfgang - "Particle-Image Velocimetry and Force Measurements of Leading-Edge Serrations on Owl-Based Wing Models" - Journal of bionic engineering - vol 11 no 3 content/page 423-438 - [doi:10.1016/S1672-6529\(14\)60055-X](https://doi.org/10.1016/S1672-6529(14)60055-X)

van Overbrüggen, Timo; Schröder, Franka; Klaas, Michael; Schröder, Wolfgang - "A particle-image velocimetry tracer generating technique for liquid flows" - Measurement science and technology - vol 25 no 8 content/page 087001 - [doi:10.1088/0957-0233/25/8/087001](https://doi.org/10.1088/0957-0233/25/8/087001)

van Overbrüggen, Timo; Dannemann, Jan; Klaas, Michael; Schröder, Wolfgang - "Holographic particle image velocimetry measurements in a four-valve combustion engine" - Experiments in fluids - vol 55 content/page 1634 - [doi:10.1007/s00348-013-1634-z](https://doi.org/10.1007/s00348-013-1634-z)

## 2013

Bücker, Isabella Maria; Karhoff, Daniel-Christian; Klaas, Michael; Schröder, Wolfgang - "Engine In-Cylinder Flow Control via Variable Intake Valve Timing" - SAE technical paper - vol 2013-24-0055 content/page 11 Seiten - [doi:10.4271/2013-24-0055](https://doi.org/10.4271/2013-24-0055)

Soodt, Thomas; Pott, Desirée; Klaas, Michael; Schröder, Wolfgang - "Analysis of basic flow regimes in a human airway model by stereo-scanning PIV" - Experiments in fluids - vol 54 no 6 content/page 1562 - [doi:10.1007/s00348-013-1562-y](https://doi.org/10.1007/s00348-013-1562-y)

Hartmann, Axel; Klaas, Michael; Schröder, Wolfgang - "Coupled Airfoil Heave/Pitch Oscillations at Buffet Flow" - AIAA journal - vol 51 no 7 content/page 1542-1552 - [doi:10.2514/1.J051512](https://doi.org/10.2514/1.J051512)

Winzen, Andrea; Klaas, Michael; Schröder, Wolfgang - "High-speed PIV measurements of the near-wall flow field over hairy surfaces" - Experiments in fluids - vol 54 no 3 content/page 1472 - [doi:10.1007/s00348-013-1472-z](https://doi.org/10.1007/s00348-013-1472-z)

## 2012

Soodt, Thomas; Schröder, Franka; Klaas, Michael; van Overbrüggen, Timo; Schröder, Wolfgang - "Experimental investigation of the transitional bronchial velocity distribution using stereo scanning PIV" - Experiments in fluids - vol 52 content/page 709-718 - [doi:10.1007/s00348-011-1103-5](https://doi.org/10.1007/s00348-011-1103-5)

Hartmann, Axel; Klaas, Michael; Schröder, Wolfgang - "Time-resolved stereo PIV measurements of shock-boundary layer interaction on a supercritical airfoil" - Experiments in fluids - vol 52 no 3 content/page 591-604 - [doi:10.1007/s00348-011-1074-6](https://doi.org/10.1007/s00348-011-1074-6)

Bücker, I.; Karhoff, D.-C.; Klaas, Michael; Schröder, Wolfgang - "Stereoscopic multi-planar PIV measurements of in-cylinder tumbling flow" - Experiments in fluids - vol 53 no 6 content/page 1993-2009 - [doi:10.1007/s00348-012-1402-5](https://doi.org/10.1007/s00348-012-1402-5)

Pielhop, K.; Klaas, Michael; Schröder, Wolfgang - "Analysis of the unsteady flow in an elastic stenotic vessel" - European journal

of mechanics / B, Fluids - vol 35 Special no SI content/page 102-110 - [doi:10.1016/j.euromechflu.2012.01.010](https://doi.org/10.1016/j.euromechflu.2012.01.010)

Klän, S.; Burgmann, S.; Bachmann, Thomas Willem; Klaas, Michael; Wagner, Hermann; Schröder, Wolfgang - "Surface structure and dimensional effects on the aerodynamics of an owl-based wing model" - European journal of mechanics / B, Fluids - vol 33 no May/June content/page 58-73 - [doi:10.1016/j.euromechflu.2011.12.006](https://doi.org/10.1016/j.euromechflu.2011.12.006)

## 2011

Karhoff, D.-C.; Bücker, I.; Dannemann, J.; Klaas, Michael; Schröder, Wolfgang - "Experimental Analysis of Three-Dimensional Flow Structures in Two Four-Valve Combustion Engines" - SAE technical paper - vol 2011 content/page 12 pages - [doi:10.4271/2011-24-0044](https://doi.org/10.4271/2011-24-0044)

Schäfer, Lisa; Dierksheide, U.; Klaas, Michael; Schröder, Wolfgang - "Investigation of dissipation elements in a fully developed turbulent channel flow by tomographic particle-image velocimetry" - Physics of fluids - vol 23 no 3 content/page 035106 - [doi:10.1063/1.3556742](https://doi.org/10.1063/1.3556742)

Hartmann, Axel; Steimle, P. Christian; Klaas, Michael; Schröder, Wolfgang - "Time-Resolved Particle Image Velocimetry of Unsteady Shock Wave-Boundary Layer Interaction" - AIAA journal - vol 49 no 1 content/page 195-204 - [doi:10.2514/1.j050635](https://doi.org/10.2514/1.j050635)

## 2010

Dannemann, Jan; Pielhop, Kai; Klaas, Michael; Schröder, Wolfgang - "Cycle-Resolved Multi-Planar Flow Measurements in a Four-Valve Combustion Engine" - Experiments in fluids - vol 50 no 4 content/page 961-976 - [doi:10.1007/s00348-010-0963-4](https://doi.org/10.1007/s00348-010-0963-4)

Klän, Stephan; Klaas, Michael; Schröder, Wolfgang - "The influence of leading-edge serrations on the flow field of an artificial owl wing" - AIAA meeting papers on disc - vol [15.]2010 no 6

## 2008

Klän, Stephan; Bachmann, Thomas Willem; Klaas, Michael; Wagner, Hermann; Schröder, Wolfgang - "Experimental analysis of the flow field over a novel owl based airfoil" - Experiments in fluids - vol 46 no 5 content/page 975-989 - [doi:10.1007/s00348-008-0600-7](https://doi.org/10.1007/s00348-008-0600-7)

Steimle, Per Christian; Schröder, Wolfgang; Klaas, Michael - "Transonic shock buffet interference of an oscillating high aspect ratio swept wing" - AIAA meeting papers on disc - vol 13 no 10 content/page 1 S.

## 2007

Jessen, Wilhelm; Schröder, Wolfgang; Klaas, Michael - "Evolution of jets effusing from inclined holes into crossflow" - The international journal of heat and fluid flow - vol 28 no 6 content/page 1312-1326 - [doi:10.1016/j.ijheatfluidflow.2007.06.010](https://doi.org/10.1016/j.ijheatfluidflow.2007.06.010)

Große, Sebastian; Schröder, Wolfgang; Klaas, Michael; Klöckner, A.; Roggenkamp, Jan - "Time resolved analysis of steady and oscillating flow in the upper human airways" - Experiments in fluids - vol 42 no 6 content/page 955-970 - [doi:10.1007/s00348-007-0318-y](https://doi.org/10.1007/s00348-007-0318-y)

Bachmann, Thomas Willem; Klän, Stephan; Baumgartner, Werner; Klaas, Michael; Schröder, Wolfgang; Wagner, Hermann - "Morphometric characterisation of wing feathers of the barn owl *Tyto alba pratincola* and the pigeon *Columba livia*" - Frontiers in zoology - vol 4 no 23 content/page 15 S. - [doi:10.1186/1742-9994-4-23](https://doi.org/10.1186/1742-9994-4-23)

## 2006

Huppertz, Guido; Schröder, Wolfgang; Klaas, Michael - "Engine jet/vortex interaction in the near wake of an airfoil" - AIAA meeting papers on disc - vol [11.]2006 no 10-13

## 2005

Klaas, Michael; Schröder, Wolfgang; Althaus, Wolfgang - "Experimental investigation of slender streamwise vortices and oblique shock-vortex interaction" - AIAA papers - vol 2005-4630 bis 2005-5393

2002

Thomer, Oliver; Klaas, Michael; Krause, Egon; Schröder, Wolfgang - "Interaction between longitudinal vortices and normal and oblique shocks" - International journal for numerical methods in engineering : IJNME - vol 60 no 1

Klaas, Michael; Thomer, Oliver; Schröder, Wolfgang - "Experimental and computational investigation of oblique shock-vortex-interaction" - AIAA papers - vol 2002-2380 bis 2002-3348