List of Publications TSP

Fey, U., Engler, R.H., Egami, Y., Iijima, Y., Asai, K., Jansen, U., Quest, J., 2003. Transition detection by temperature sensitive paint at cryogenic temperatures in the European Transonic Wind Tunnel (ETW). ICIASF 2003 Record, 20th International Congress on Instrumentation in Aerospace Simulation Facilities, Göttingen, Germany, 25-29 August 2003, pp. 77-88

Iijima, Y., Egami, Y., Nishizawa, A., Asai, K., Fey, U., Engler, R.H., 2003. Optimization of temperature sensitive paint formulation for large-scale cryogenic wind tunnels. In: ICIASF 2003 Record, 20th International Congress on Instrumentation in Aerospace Simulation Facilities, 25-29 August, Göttingen, Germany, pp. 70-76

Egami Y., Fey, U., Klein, C., Sitzmann, M., Wild, J., 2006. Transition Detection on High-Lift Devices in DNW-KKK by means of Temperature-Sensitive Paint. 12th International Symposium on Flow Visualization, Paper 237, Göttingen, Germany, 2006

Fey, U., Egami, Y., 2007. Transition Detection by Temperature-Sensitive Paint. Springer Handbook of Experimental Fluid Mechanics, Chap. 7.4 ed C. Tropea, A. Yarin, J. Foss, Springer Verlag, Berlin Heidelberg 2007

Egami, Y., Klein, C., Henne, U., Bruse, M., Ondrus, V., Beifuss, U., 2009. Development of a Highly Sensitive Temperature-Sensitive Paint for Measurements under Ambient (0 – 60 °C) Conditions. AIAA 2009-1075

Egami, Y., Fey, U., Klein, C., Quest, J., Ondrus, V., Beifuss, U., 2012. Development of new two-component temperature-sensitive paint (TSP) for cryogenic testing. Meas Sci Technol 23:115301

Yorita, D., Asai, K., Klein, C., Henne, U., Schaber, S., 2012. Transition detection on rotating propeller blades by means of temperature-sensitive paint. AIAA paper 2012-1187

Klein, C., Henne, U., Sachs, W., Beifuss, U., Ondrus, V., Bruse, M., Lesjak, R., Löhr, M., 2014. Application of carbon nanotubes (CNT) and temperature-sensitive paint (TSP) for the detection of boundary layer transition. AIAA paper 2015-1558

Capone, A., Klein, C., Di Felice, F., Beifuss, U., Miozzi, M., 2015. Fast response underwater TSP investigation of subcritical instabilities of a cylinder in crossflow. Exp Fluids 56(10):1-14

Costantini, M., Fey, U., Henne, U., Klein, C., 2015. Nonadiabatic surface effects on transition measurements using temperature-sensitive paints. AIAA J 53(5):1172-1187

Costantini, M., Risius, S., Klein, C., 2015. Experimental investigation of the effect of forward-facing steps on boundary layer transition. Procedia IUTAM 14:152-162

Lang, W., Gardner, A.D., Mariappan, S., Klein, C., Raffel, M., 2015. Boundary-layer transition on a rotor blade measured by temperature sensitive paint, thermal imaging and image derotation. Exp Fluids 56:118

Martinez-Schramm, J., Hannemann, K., Ozawa, H., Beck, W., Klein, C., 2015. Development of temperature sensitive paints in the High Enthalpy Shock Tunnel Göttingen, HEG. 8th European Symposium on Areothermodynamics for Space Vehicles, March 2015, Lisbon, Portugal

Ondrus, V., Meier, R., Klein, C., Henne, U., Schäferling, M., Beifuss, U., 2015. Europium 1,3-di(thienyl)propane-1,3-diones with outstandingproperties for temperature sensing. Sens Actuator A Phys 233:434-441

Miozzi, M., Capone, A., Di Felice, A., Klein, C., Liu, T., 2016. Global and local skin friction diagnostics from TSP surface patterns on an underwater cylinder in cross flow. Phys Fluids 28(12):12410

Klein, C., Henne, U., Costantini, M., Ondrus, V., Beifuss, U., Zhai, J., Quest, J., 2016. Development of a highly sensitive temperature-sensitive paint for measurements under cryogenic temperature (100-160 K) conditions. AIAA paper 2016-0650

Costantini, M., Hein, S., Henne, U., Klein, C., Koch, S., Schojda, L., Ondrus, V., Schröder, W., 2016. Pressure gradient and non-adiabatic surface effects on boundary-layer transition, AIAA J. 54(11):3465-3480

Risius, S., Beck, W.H., Klein, C., Henne, U., Wagner, A., 2017 Determination of heat transfer into a wedge model in a hypersonic flow using temperature-sensitive paint. Exp. Fluids 58:117

Weiss, A., Gardner, A.D., Klein, C., Raffel, M., 2017. Boundary-layer transition Measurements on Mach-scaled helicopter rotor blades in climb. CEAS Aeronautical Journal 8(4):613-623

Weiss, A., Geisler, R., Schwermer, T., Yorita, D., Henne, U., Klein, C., Raffel, M., 2017. Single-shot pressure-sensitive paint lifetime measurements on fast rotating blades using an optimized double-shutter technique. Exp Fluids 58:120

Costantini, M., Risius, S., Klein, C., 2018. Non-adiabatic surface effects on step-induced boundary-layer transition, Flow, Turbul. Combust. 100(4):1145-1177

Weiss, A., Gardner, A.D., Schwermer, T., Klein, C., Raffel, M., 2019. On the effect of rotational forces on rotor blade boundary-layer transition. AIAA J 57(1):252-266

Costantini, M., Risius, S., Koch, S., Fuchs, C., Gerhard, U., Hein, S., Klein, C., 2019. Experimental study of bump effects on boundary-layer transition in compressible high Reynolds number flow. Exp Thermal Fluid Science 106:234-254

Lemarechal, J., Klein, C., Henne, U., Puckert, D.K., Rist, U., 2019 Detection of Lambda-and Omega-vortices with the temperature-sensitive paint method in the late stage of controlled laminar-turbulent transition. Exp Fluids 60:91

Lemarechal, J., Costantini, M., Klein, C., Kloker, M.J., Würz, W., Kurz, H.B.E., Streit, T., Schaber, S., 2019. Investigation of stationary-crossflow-instability induced transition with the temperature-sensitive paint method. Exp Thermal Fluid Science 109:109848

Dimond, B., Costantini, M., Risius, S., Fuchs, C., Klein, C., 2019. Experimental analysis of suction on step-induced boundary-layer transition. Exp Thermal Fluid Science 109:109842

Klein, C., Yorita, D., Henne, U., Ondrus, V., Beifuss, U., Hensch, A.-K., Longo, R., 2019. Boundary layer transition detection on wind tunnel models during continuous pitch traverse. AIAA 2019-1180

Klein, C., Yorita, D., Henne, U., Ondrus, V., Hensch, A.-K., Longo, R., Gimbel, A., van Deetzen, S., 2020. Application of temperature sensitive paint to investigate laminar-to-turbulent transition on nacelles. AIAA paper 2020-1608