Private scientist. Hobbies: exploring the world, nature photography, gardening, mountaineering, cyclamen breeding

1964: Dipl.-Ing. Civil Engineering CE (construction, ***TU Hannover***). 1968: Dr.-Ing. in Structural Dynamics (CE). 1978: Dr.-Ing. habil. Venia Legendi in Mechanics of Lightweight Structures (TU-M)

1980-1983: Lecturer at Universität der Bundeswehr München: on 'Fracture Mechanics' in the construction faculty and 1990-2002 on 'Composite Lightweight Design' in aerospace faculty

1987: Full professorship 'Lightweight Construction', *not started in favor of industry*

1998: Honorary professorship at Universität der Bundeswehr München

1968-1970: FEA-programming (***DLR***-Essen/Mühlheim)

1970-2004: MAN-Technologie (München and Augsburg). Headed the Main Department 'Structural and Thermal Analysis'. 50 years of life with fibers CF, AF, GF, BF, BsF.

*Theoretical fields of work: structural dynamics, finite element analysis, rotor dynamics, structural reliability, partial/deterministic safety concepts, material modeling and model validation, fatigue, fracture mechanics, design development 'philosophy' & design verification

*Mechanical Engineering applications at ***MAN****:* ARIANE 1-5 launcher family (design of different parts of the launcher stages inclusively Booster) Cryogenic Tanks, High Pressure Vessels, Heat Exchanger in Solar Towers (GAST Almeria) and Solar Field, Wind Energy Rotors (GROWIAN Ø103 m, WKA 60, AEROMAN. Probably the first world-wide wind energy conference organized in 1979), Space Antennas, Automated Transfer Vehicle (Jules Verne, supplying the space station ISS), Crew Rescue Vehicle (CMC application) for ISS, Carbon and Steel Gas-Ultra-Centrifuges for Uranium enrichment. Material Databank etc.

*Civil Engineering applications: Supermarkets, armoring plans, pile foundation, 5th German climbing garden (1980 designed, concreted and natural stone-bricked)

1971-2010*:* Co-author of ***ESA/ESTEC***-Structural Materials Handbook, Co-author and first convener of the ESA-Buckling Handbook and co-author in Working Groups WGs for ESA-Standards 'Structural Analysis', 'High Pressure Vessels' (metals and composites) and 'Safety Factors'

1972–2015, ***IASB***: Luftfahrt-Technisches Handbuch HSB 'Fundamentals and Methods for Aeronautical Design and Analyses'. Author/Co-author of numerous HSB sheets. Around 2006 co-transfer with co-translation of the HSB aerospace structural handbook into its present English version.

1980-2011: **Surveyor/Advisor** for German BMFT (MATFO, MATEC), BMBF (LuFo), DFG

1980-2006: **VDI Guideline 2014**, co-author of Parts 1 and 2, Beuth Verlag '*Development of Fiber-reinforced Plastic Components'; Part 3 'Analysis*', editor/convenor/co-author

1986 and 1889: One week lecture on composite design in Pretoria, SA

2019:*__GLOSSAR.__ "Fachbegriffe für Kompositbauteile - *technical terms for composite parts*". Springer 2019. Edited at the suggestion of carbon concrete colleagues to help to better understand each other

2000-2013: World-Wide-Failure-Exercises WWFE on UD materials' strength: WWFE-I (*2D stress states)* non-funded winner against institutes of the world, WWFE-II (*3D states*) top-ranked

2009-2021 linked to ***Carbon Composites e.V***. at Augsburg, later ***Composites United CU e.V.*** and to TUDALIT Dresden. Since 2011 working on the light weight material Fiber-reinforced (polymer) Carbon Concrete. **Founded and headed the working groups**: (1) 2009: 'Engineering' linked to the WG Non-Destructive Testing and the WG Connection Technologies, mechanical engineering. (2) 2010: 'Composite Fatigue'. In 2010 the author held an event that was excellently attended by international speakers. (3) 2011: 'Design Dimensioning (*Auslegung, Bemessung*) and Design Verification (*Nachweis*)' mainly for carbon concrete. This working group was the foundation stone for the later specialist network ***CU Construction***, aiming at *"Fiber-based lightweight construction*". (4) 2017: 'Automated fabrication in construction including serial production' *(3D-Print)*. (5) 2020, 2021: Forum 'Carbon concrete for practice' at 'Ulm Concrete Days'.

2022:* Life-Work Cuntze - a compilation from the author's papers, presentations, published and non-published design sheets and project works in industry (850 Pages)

2023:* Design of Composites using Failure-Mode-Concept-based tools - from Failure Model Validation to Design Verification. Mechanics of Composite Materials, Vol. 59, No. 2, May, 2023, pp. 263-282.. Minimum Test Effort-based Derivation of Constant-Fatigue-Life curves, displayed for the brittle UD composite materials. Mechanics of Composite Materials, Vol.?, in press.. Comparative Characterization of Four Significant UD Strength Failure Criteria (SFC) with focusing a direct use of Friction Values, use of 'Strength' and 'Proportional Loading', 54 pages.. Creator of a formula for Tsai's 'Omni strain envelope' to simpler assess multiple-ply laminates by-passing the effortful ply-by-ply analysis.. Benefits, applying Tsai's Ideas 'Trace', 'Double-Double' and 'Omni Failure Envelope' to Multiply UD-ply composed Laminates? (with E. Kappel). Strength Model Validation and Design Verification of Ceramic Structural Components. _ *Preprints, drafts are downloadable from https://www.carbon-connected.de/Group/Prof.Ralf.Cuntze or from Research Gate.*