PRZEMYSŁAW DANIEL PASTUSZAK

Birth: 28 December 1986 in Poland

Address: Kraków, Poland

E-mail: **przemekpastuszak@gmail.com**

Website: **pdpastuszak.pl**

Phone: +48 660 488 455

Expert in nuclear engineering with fourteen years of experience, specialized in Finite Element Analysis (FEA), Computer-Aided Design (CAD), international standards (ASME, RCC-MRx, EN), codes, regulations, manufacturing and project management.

I have highly developed technical writing and reviewing skills. I am motivated by talented people and complex problems, even the ones which seem to be unsolvable.

KEY COMPETENCIES

Technical:

- International standards (ASME, EN, RCC-MRx)
- Advanced FEA using ANSYS Workbench and APDL
- Manufacturing and Quality Plans
- Nuclear regulations (e.g. PED directive, ESPN)
- Design for Manufacturing / Assembly (DFM/DFA)
- Design of beam, shell and solid structures
- Bolt, weld and EP assessments
- Mechanical design using CATIA and Enovia
- SOLIDWORKS, AutoCAD, Inventor
- Writing & Reviewing technical documentation
- Mathcad, Maple, Mathematica

Behavioural:

- Results-oriented team player
- Responsibility, organisation agility
- Excellent communication & presentation
- Well-developed interpersonal skills
- Management of contracts and meeting deadlines
- Initiative, integrity, flexibility and loyalty
- Scientific curiosity and critical thinking
- Problem-solving under time pressure
- Stress & conflict management
- Coordinating and executing complex projects
- Maintaining fruitful and long-term collaborations

PROFESSIONAL EXPERIENCE

March 2023 - present — **External Expert** at ARIAL INDUSTRIES, contract for **ITER**

- *Following European regulations (ESPN) and American standards (ASME, RCC-MRx, Eurocodes). Advanced FEA with the use of ANSYS Workbench, APDL and LS-DYNA; static, transient and dynamic studies in structural, thermal, hydraulic problems.*
- *Design and integration of complex ITER components. Preparing Manufacturing Readiness Reviews. Advance knowledge on Design-To-Manufacturing process.*

Nov. 2020 – Feb. 2023 — **Senior Mechanical Engineer** at DAES and delegated to **ITER**

- *Advanced Finite Element Analyses with the use of ANSYS Workbench, APDL and LS-DYNA; static, transient and dynamic studies in structural, thermal, hydraulic problems.*
- *Following European and American standards (ASME BPVC VIII, ASME III, RCC-MRx, ASME B31.3, ANSI/ANS-58.2, ANSI/AISC 360, AWS D1.1M and ANSI/AISC N690).*
- *High Energy Line Break analyses of the B2M/DTR bridge and protective structures in B2M.*
- *Done over 120 EP assessments of various anchoring components with the use of CBT tool,*
- *Established data libraries including procedures, templates, literature, reporting and presentations.*
- *Evaluation of non-conformities and follow-up with corrective actions.*
- *Reviewed technical reports according to internal ITER procedures (22MAL7, 35BVV3, VQVFEN).*

Sep. 2017 – Aug. 2020 — **Senior Mechanical Engineer** at CERN, Engineering Department, Mechanical and Materials Engineering Group, Engineering Design and Simulation section (COFUND Senior Fellowship contract).

- *Advanced Finite Element Analyses for multidisciplinary projects in the biggest CERN experiments. Static, transient and dynamic studies in mechanical, thermal and electromagnetic problems.*
- *Following European and American standards (EUROCODE 3, VDI2230, EN13445, EN13155, EN13480, ASME Boiler and Pressure Vessel Code VIII).*
- *Cooperation with engineers, scientists and technicians from around the world.*
- *Elaborated procedures for FLUKA maps import to ANSYS and their verification with APDL snippets, weld assessment according to EUROCODE3, pressure vessel evaluation with ASME.*
- *Verification and development of 3D mechanical design models and 2D technical drawings.*
- *Reviewing manufacturing flow of designed and commissioned components and machines.*
- *Python scripting for parametric studies (Spaceclaim). Tutoring and training junior engineers.*
- *Writing and reviewing technical reports. Preparing recommendations and APDL subroutines for complex problems in ANSYS Workbench.*

www.linkedin.com/in/przemyslaw-pastuszak

May 2014 – May 2017	Contractor in the OPUS 5 Research Project funded by the National Science Centre of Poland; **Optimal design of composite materials and structures subjected to fatigue loads**:

- *Directly supervised thermomechanical tests of composite plates with holes and participated in fatigue tests and SHM, failure Finite Element Analysis **using ANSYS**. LEFM analysis.*
- *Cooperated in the design and preparation of specimens and experimental setup, IR-NDT Thermographic system and MTS 793 Material Testing System.*
- *Cooperated with Department of Materials Engineering, Lublin University and companies.*

Mar. 2014 – May 2016	Project Manager of PRELUDE 5 Research Project funded by the National Science Centre; **Detection and evaluation of the delamination in multi-layered composite structures by Active Infrared Thermography**:

- *Proposed and carried out series of the thermo-mechanical numerical 3D FEM analyses of composite structures with delaminations using ANSYS. LEFM studies of delaminations growth.*
- *Conducted experimental studies of composite structures with artificial and real delaminations subjected to mechanical and thermal loads.*
- *Carried out measurements of strains during compression tests of curved composite structures using MGCplus Amplifier and Catman HBM Software.*

Oct. 2013 – Aug. 2017	Research and teaching assistant at Cracow University of Technology (CUT), Faculty of Mechanical Engineering, Institute of Machine Design:

- *Taught subjects such as experimental mechanics, LEFM, machine design, mechanics of composites, technical documentation and drawing, CAD, Finite Element Analysis (FEA), ANSYS.*

Aug. – Dec. 2014	Contractor at Tech-Force (Ltd.); **numerical calculations division** - new solutions for the design of composite blast walls: **applied ANSYS software** in 3D finite element modelling of composite blast walls.
Feb. – Aug. 2011	Maintenance Coordinator at Mota-Engil Central Europe S.A. (PLC): collaborated with various companies, supported on-going projects.

EDUCATION

Sep. 2016	PhD defended with distinction (summa cum laude) in the field of technical sciences, discipline: **Mechanics**, specialisation: **Composite Materials**. Thesis: **Failure analysis of composite structures by thermography.**
Oct. 2010 – Sept. 2014	Full-time PhD studies at the Cracow University of Technology, Faculty of Mechanical Engineering, in the field of Technical Sciences, discipline: **Mechanics, Machine Design and Technical Operation**.

- *2 times the best doctoral student of the year, advanced solid mechanics knowledge, rheology, FEA, particle accelerator design, heat transport, NDT, CAD, IRT.*

2005 – 2010	M.Sc. at the Cracow University of Technology, Faculty of Mechanical Engineering. Thesis: **Triboacoustic tests of the friction joints,** defended with distinction (summa cum laude) and awarded by Dean.

ACHIEVEMENTS

2010 – Present	Author of **70+ technical reports**, 21 peer-reviewed scientific papers in journals within national and international scope, 3 popular science articles, 9 articles in conference proceedings, 1 patent, 1 monograph. Presented the research work at **17 scientific conferences** (e.g. ICCM19 – Montreal, ECCM15&16 – Venice)

COURSES / TRAINING

- French regulations for PE/NPE (ESPN) including Module H and H1 by Thierry JOURDAN, Certified after two exams
- Radiation Protection - Awareness, Controlled and Supervised Areas (CERN, 4 Sept 2017, 12 Jul 2018)
- Supervised Radiation Areas – Introduction, Basics, Practice (CERN, 13 Jul 2018)
- General radiation protection and safety instructions (GSI Helmholtz Centre for Heavy Ion Research, 25 March 2019)
- ANSYS Mechanical Heat Transfer Advanced, (CERN, 4-6 February 2020, 24 hours)
- ANSYS LS-Dyna, CADFEM Suisse AG (CERN, 16-18 April 2018)
- Structural design and safety verifications of steel constructions according with the Eurocode 3 (CERN 2019, 3days)
- AutoCAD Advanced verified by Autodesk Certified Professional exam (Cracow, 19.06.2017, 40 hours)
- Design of 3D structures in CATIA V5 (Cracow, 3.06.2017)

LANGUAGES

Polish:	Native		French:	Advanced	(written and spoken)
English:	**Fluent**		Spanish:	Intermediate	(written and spoken)

www.linkedin.com/in/przemyslaw-pastuszak