

Sergey Kuzmichev

Instructor

Career synopsis

Sergey is a seasoned engineering professional whose career spans over 15 years across pivotal roles within the oil and gas sector. His profound expertise in drilling risers, wellhead systems, and structural analysis positions him as a distinguished figure in the field of Mechanical Engineering.

With a Ph.D. in Mechanics of Deformable Solids from the Institute for Problems in Mechanical Engineering of the Russian Academy of Science, Sergey's academic foundation is robust. His research has significantly contributed to the understanding of structural defects in brittle solids under mechanical stress, a critical area in mechanical and civil engineering.

Sergey's professional journey is marked by his tenure at Equinor, where he currently serves as a Principal Engineer in Marine Technology. Here, he leads R&D projects focusing on the fatigue issues of subsea equipment, integrating deepwater steel catenary risers, and enhancing wellhead systems through finite element analysis (FEA). His responsibilities encompass not only the technical analysis but also quality assurance of technical documentation from vendors, ensuring that all operations adhere to stringent industry standards such as DNVGL and NORSOK.

Prior to Equinor, Sergey was a Senior Engineer at Statoil, where he was integral to the wellhead fatigue group, responsible for developing and introducing technological improvements and compiling technical requirements. His career also includes a significant stint at FMC Technologies in Russia, where he performed detailed engineering analysis for well access systems and contributed to product standardization efforts.

Sergey's ability to navigate complex engineering challenges is complemented by his proficiency in a variety of CAD/CAE software tools, including ABAQUS, ANSYS, and SolidWorks. This technical versatility enables him to provide comprehensive training and mentorship to peers and juniors, enhancing team capabilities and fostering a culture of continuous learning.

An advocate for innovation and improvement, Sergey is committed to optimizing work processes and engaging in proactive problem-solving. His approach is deeply rooted in a philosophy that values open-mindedness and readiness for new challenges, traits that make him an exceptional coach and instructor.

In addition to his technical acumen, Sergey is a communicator and educator, capable of distilling complex concepts into understandable terms and training internal personnel to enhance their skills and knowledge. His role on learning platforms is not merely to instruct but to inspire, equipping learners with the tools they need to excel in the dynamic field of engineering.

Sergey represents a blend of theoretical knowledge and practical expertise, making him an invaluable resource for anyone looking to deepen their understanding of mechanical engineering in the oil and gas sector. His career narrative is a testament to a professional who is as much a scholar as he is a practitioner, driven by a passion for both teaching and technological advancement.

Professional experience

January 2014-Until now - Principal Engineer Platform Technology Dynamic risers - Equinor ASA, Norway

- Finite-element analyses: all activities regarding fatigue issues for subsea equipment during well construction and finite-element analysis documentation (riser analysis, system wellhead analysis, component analysis) in all ongoing projects (historical and planned)
- Instrumentation/Measurements: post-processing of the data from measurements to evaluate well fatigue status
- Research and Technology: develop and introduce technology improvements (compile internal technical requirements and recommendations to industry standards DNVGL RP 0142, DNV WHF Analysis Method 2011, NORSOK U001)
- Curriculum development

October 2009-January 2014 - Senior Structural Analysis Engineer - FMC Technologies, Norway

- Provide input to engineering planning of own tasks, report deviations from plan and propose corrective actions accordingly.
- Take responsibility to keep up with product standardization and implement standard products in WAS.
- Plan and perform design reviews on own technical documents and update same as required.
- Participate in training of internal personnel if required.
- Challenge the internal work processes and contribute to their development and improvement.
- Ensure that agreed final version of codes, standards and software are used in all work.
- Participate in meetings with suppliers and customers if required
- Perform wellhead fatigue analysis based on ISO 13628-7, DNV RP-C203, DNV Wellhead Fatigue Analysis Method, FMC policies and procedures, and to the quality specified or implied by contract documents, FMC specifications and ISO 9001
- Provide a full package of documentation regarding wellhead fatigue analysis
- Personnel training

July 2008-June 2011 - Scientific associate - Institute for Problems in Mechanical Engineering Russian Academy of Science, Russia

- Perform a full package of FEA analysis in all grants
- Analysis of the evolution of the morphology of a micropore in a brittle solid under external stress.
- Analysis of an external tensile mechanical stress applied to a fiber and highpower UV lightpulses on a photosensitive optical fiber.
- Development of the mechanism of formation of fiber Bragg gratings of the type IIA in photosensitive optical fibers and a theoretical model of their formation
- Investigation of the critical value of the tensile stress of the fiber at which structural defects intensively nucleate in the fiber under the joint action of the irradiation and external load. This stress coincides with the breaking stress in experiments made.
- Personnel training

April 2006-December 2006 - Stress engineer - Boeing, Russia

- Perform a full cycle of FEA analysis in the project
- Development of a 3D composite models of fuel separating plates
- Analysis of maximum stress in acc. with internal Boeing standards
- Perform optimization of the wing's weight

Education and qualifications

| Type | Name |
|----------------------|---|
| 2008 - 2011, Ph.D | Institute for Problems in Mechanical Engineering of Russian Academy of Sciences, Applied Mechanics |
| 2009 | FMC Kongsberg Subsea AS, Subsea Technology / Presentation techniques / Abaqus software courses, 379 hours |

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