



Axel Lorenz

Nationality: German Germany

ABOUT MYSELF

I am an engineer working towards a fusion energy source for more than 30 years in experimental plasma physics. I am naturally curious. I like the growing project management side of the task just as much as the technical challenge.

WORK EXPERIENCE

Max-Planck-Institut für Plasmaphysik – Greifswald, Germany

City: Greifswald | Country: Germany

Head of group W7-X Engineering

[1 Jan 2022 – Current]

Tasks

- Overall technical and planning management of W7-X engineering design, maintenance and enhancement work
- Overall technical responsibility for W7-X plants such as plasma vessel, cryostat, wall protection, supply systems.
- Organization and management of solution finding for technological tasks in W7-X equipment.

Skills:

- Communication and management experience due to 20 years of project co-ordination experience
- Organizational and analytical skills due to many years of work in engineering design review boards
- Scientific/technical skills from work in fusion technology projects (fuelling technologies, divertor thermography)

Achievements (including contribution to team):

- Successful commissioning and first high heat flux operation of W7-X in 2022
- Successful and timely completion of first major W7-X maintenance phase in 2023
- Virtually interruption free W7-X operation phases OP2.2 and OP2.3 (2024/2025)

Added value

- Technical and personnel lead of five expert groups during first major W7-X maintenance phase in 2023
- Co-work and main reports in major W7-X task force RPO 2023ff. (*Reliable Plasma Oeperation*)

Max-Planck-Insitut für Plasmaphysik – Greifswald, Germany

City: Greifswald | Country: Germany

Head of W7-X Project Coordination

[1 Oct 2013 – 31 Dec 2021]

Tasks

- Manage planning and monitoring of overall technical work breakdown during W7-X completion phase
- Manage control of time and investment schedules on components and assembly
- Report to project board and project council
- Direct lead of 5 member team, overall co-ordination of > 20 project teams

Skills:

- Strong communication and management skills due to 12 years of scientific/technical project experience
- Organizational and analytical skills due to > 10 years of leading project control team
- Proven scientific/technical skills from fusion techncology applications (Z-pinch diagnostics, pellet injection)

Achievements (including contribution to team):

- Successful commissioning and first W7-X operation phases in 2015, 2017 and 2018
- Co-ordinated successful and timely completion of W7-X completion phase in 2021

Added value:

- Developed standardized design review procedure for W7-X on the basis of ITER and PPPL standards
- Developed standards for thermomechanical design requirements for plasma vessel components
- Co-work and main reports in two major W7-X task forces (*Preparation OP1.2a* and *Plasma vessel protection*)

Max-Planck-Institut für Plasmaphysik – Greifswald, Germany

City: Greifswald | Country: Germany

Head of Project Control

[1 Sep 2004 – 30 Sep 2013]

Tasks

- Planning, monitoring and control of overall and individual work breakdowns during W7-X construction phase
- Co-ordination of time and investment schedules on components and W7-X assembly
- Analyse and improve W7-X PLM system for CAD and office documentation.

Skills:

- scientific/technical skills due to lead and co-work in fusion technology projects (Z-pinch diagnostics, pellet injection)
- Acquiring communication and project management skills in scientific and technical project co-ordination experience
- Organizational and analytical skills due to > 10 years of leading project management team.

Achievements (including contribution to team):

- Co-ordination of successful and timely W7-X component deliveries towards scheduled assembly
- Concept design and implementation of IPT (MS-Project based integrated planning network for W7-X)
- Transformed project and risk management framework for internal work organisation of > 30 project teams.

Added value:

- Developed standards for technical procurements through requirement specifications and assessment criteria
- Derived design review procedures for W7-X on the basis of ITER and PPPL standards.

Max-Planck-Institut für Plasmaphysik, secondment to EFDA – Culham, United Kingdom

City: Culham | Country: United Kingdom

Responsible Officer, Close Support Unit

[1 Sep 2001 – 31 Aug 2004]

Tasks

- Monitor technical and scientific enhancement projects for installation at JET, Culham
- Co-ordinate multicultural project teams through design, R&D activities, procurement, installation and commissioning.
- Representing EFDA in technical contract negotiations and relations with suppliers

Skills:

- Scientific/technical skills due to lead and co-work Z-pinch diagnostics and pellet injection projects
- Acquiring communication and technical project management skills
- Acquiring detailed knowledge of all aspects of schedule and finance management

Achievements (including contribution to team):

- Main project co-ordinator role in ITER-like ICRH antenna and JET EP divertor design enhancement projects
- Participate in large fusion experiments (JET, AUG), pellet fuelling and ELM mitigation studies

Added value:

- High motivation and commitment
- Meticulous work breakdown and budget analysis and control,
- Thorough risk assessment, communication, documentation

Max-Planck-Institut für Plasmaphysik – Garching, Germany

City: Garching | Country: Germany

Post-doctoral researcher

[1 Oct 1997 – 31 Aug 2001]

Tasks

- Postdoc on large fusion experiment ASDEX Upgrade
- Concept, design, build, installation and commissioning of pellet refuelling system
- Pellet wall interaction studies, mock-up and fabrication feasibility testing.

Skills:

- Team building skills due to international project experience
- Acquiring and enhancing skills on vacuum and cryogenic technology, optical diagnostics
- Acquiring and enhancing project management and team leadership experience.

Achievements (including contribution to team):

- Successful commissioning of operational pellet injection system on ASDEX Upgrade
- Conceptual work on early detection system for mitigation of VDE and ELM in ASDEX Upgrade

Added value

- High motivation and commitment
- Independent development of diagnostics for pellet wall interaction studies
- Several first author publications

 **University of London, Imperial College** – London, United Kingdom

City: London | Country: United Kingdom

Research assistant

[1 Jan 1995 – 30 Sep 1997]

Tasks

- Fusion energy research on small and medium scale laboratory experiments (Z-pinch)
- Design, fabrication, installation and operation of ultra fast (ns resolution) optical and soft x-ray diagnostics
- Small scale project work, teaching work with undergraduate students.

Skills:

- Team building skills due to international project experience
- Acquiring and enhancing skills on vacuum and pulsed power technology, optical and x-ray diagnostics
- Acquiring and enhancing project management and team leadership experience.

Achievements (including contribution to team):

- Successful commissioning and operation of several diagnostics for MAGPIE (Z-pinch)
- Data analysis and write up of parallel PhD thesis on prepulse effects on z-pinch plasma.

Added value

- Developed an ultra fast optical diagnostic for extremely dense, short lived plasmas
- Developed and commissioned and soft x-ray crystal spectrometer
- Several first author publications

EDUCATION AND TRAINING

PhD in Experimental Plasma Physics

University of London, Imperial College, London, UK [1 Oct 1993 – 30 Jun 1997]

City: London | Country: United Kingdom | Website: <https://www.imperial.ac.uk/> | Level in EQF: EQF level 6

MSc, Optical Engineering and Spectroscopy

LITMO (now ITMO) [1 Sep 1987 – 28 Feb 1993]

City: St. Petersburg | Country: Russia | Website: <https://en.itmo.ru/> | Level in EQF: EQF level 4

LANGUAGE SKILLS

Mother tongue(s): German

Other language(s):

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

Russian

LISTENING C2 READING C2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

SKILLS

Good intercultural communication / provide leadership / assume responsibility / Good listener and communicator / Team-work oriented / Organizational and planning skills / Microsoft Word; Microsoft Excel; Microsoft PowerPoint; Microsoft Project / Analytical skills / Decision-making / Reliability / Precise writing skills acquired from college projects, assignments and working on papers/reports.