DESCRIPTION

*PSEP* aims to be the principal international journal for publication of high quality, original papers in the branches of engineering concerned with the **safety** of industrial processes and the protection of the **environment**.

Papers that deal with new developments in safety or environmental aspects, demonstrating how research results can be used in **process engineering design and practice**, are particularly encouraged. Experimental or theoretical research work bringing new perspectives to established principles, highlighting unsolved problems or indicating directions for future research will also be considered. The journal is especially interested in contributions that extend the boundaries of traditional engineering as well as in multidisciplinary papers.

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Core topic areas:

**Risk Assessment and Reliability Engineering**
- Risk assessment, risk management, consequence analysis, and uncertainty quantification.
- Supply chain risk management.
- Cyber and physical security vulnerability assessment.
- Risk assessment of hydrogen-based technologies.
- Human reliability analysis (HRA) and human-machine interface (HMI).
- Reliability predictions of integrated systems and high-temperature power electronics.
• Integrity management and reliability, availability and maintainability (RAM).

**Technical Safety and Loss Prevention**
• Fire and gas detection.
• Firewater systems.
• Functional safety and safety integrity levels (SIL)
• Layer of protection analysis (LOPA)
• Bowtie analysis.
• Emergency response
• HAZOP and other hazard/risk identification techniques.

**Modelling**
• Modelling liquid, gaseous, and two-phase releases and dispersion.
• Consequence modelling, including: fire, explosion, toxic, eco-toxic effects and projectile impacts.
• Methods, including computational fluid dynamics (CFD).
• Accident investigation and modelling.

**Chemical Toxicity and Exposure Assessment**
• Toxic releases and exposure assessment.
• Process plant health issues.

**Process Pipelines, Storage and Security**
• Process pipelines security and terrorism.
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• Carbon capture and storage (CCS) and CO2 transport.

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• Fire, combustion, and explosion phenomena.
• Dust explosions.
• Fire and blast protection and survivability.

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• Human performance optimization by design.
• SIMOPS (simultaneous operations).
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• Communications and risk control systems.
• Resilience engineering.
• Technical assurance and workforce training.

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• Hazard identification
• Design and development of new processes and equipment.
• Methodologies for ranking inherent safety.
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**Nuclear Safety**
• Waste disposal.
• Design for decommissioning.
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• Nuclear reactor protective and monitoring systems.

**Reaction Hazards**
• Chemical thermal stability and thermal reaction hazards.
• Influence of impurities on reaction hazards.
• Development of reactivity hazard index ranking tools.
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• Compatibility/reactivity of chemicals involved in a chemical process.

**Industrial Hazards and Safety Cases**
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• Computational modelling to simulate actual incidents
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• Incident investigation methodologies
• Incident databases and their applications.

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• Methods and technologies for prevention and treatment of air pollution
• Air dispersion modelling
• Prediction and mitigation of air pollution incidents
• Health impacts from air pollution

**Resource and waste management**
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• Waste minimisation
• Waste treatment technologies
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• Landfill and waste repository design, operation and management
• Land remediation and recovery

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• Potable water treatment
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