

Process Network Optimisation
with P-graph

Machine Learning Applications in
Process Integration

Life Cycle Assessment:
from Basics to Application

Process Integration for Sustainability

PRISE and IIPG Joint Workshop

*Under the auspices of
The 28th Conference on Process Integration,
Modelling and Optimization for Energy Savings and
Pollution Reduction - PRES'25*



University of
Nottingham
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PRISE and IIPG Joint Workshop

Sustainable Processing Networks

22 August 2025, 10:00 — 16:00

Process Network Optimisation with P-graph

Jean Pimentel-Losada, Széchenyi István University, Győr, Hungary

This hands-on workshop introduces the P-graph framework, a graph-theoretical tool widely used for designing and optimising complex systems, such as supply chains, and industrial processes.

What will you learn: The workshop will provide the underlying principles of a rigorous yet practical approach to solving large-scale problems efficiently, and will introduce the solution of complex problems via the freeware tool, P-Graph Studio.

Prerequisites: Basic understanding of Process Design, Supply Chains, or Business Processes.

Scope of the workshop: The course teaches the framework fundamentals — graphical representation, axioms, and algorithms — by addressing case studies across industrial and systems engineering domains.

23 August 2025, 09:00 — 12:00

Machine Learning Applications in Process Integration

Jeng Shiun Lim, Universiti Teknologi Malaysia, Johor Bahru, Malaysia

This hands-on workshop introduces Machine Learning (ML) applications in process integration — an emerging approach to optimize energy use, reduce costs, and enhance sustainability in industrial systems. Participants will explore how ML techniques can support decision-making in process integration.

What will you learn: The workshop will provide the key concepts of supervised and unsupervised ML techniques and demonstrate their use in solving real-world process integration problems. Participants will also gain hands-on experience with Python tools to apply ML models effectively in industrial scenarios.

Prerequisites: Basic understanding of Process Integration, or Programming (preferably in Python).

Scope of the workshop: The course covers ML fundamentals — data handling, model building, and evaluation — through case studies in process integration. It includes interactive lectures, real-world applications, and practical exercises using

Python.

23 August 2025, 14:00 — 17:00

Life Cycle Assessment (LCA): from Basics to Application

Kok Sin Woon, The Hong Kong University of Science and Technology, Guangzhou, China

This workshop introduces the Life Cycle Assessment (LCA), a crucial tool for evaluating the environmental impact of products and processes throughout their entire life cycle.

What will you learn: Participants will learn the fundamental knowledge of LCA and its applications across various industries, including energy, solid waste management, and green building construction.

Prerequisites: Basic understanding of environmental science and sustainability, engineering process, and material flow.

Scope of the workshop: This workshop will explore basic LCA concepts and the challenges of implementation, including goal and scope definition, data quality, methodological complexity, and results interpretation. Several case studies will be used to equip participants with the knowledge and skills necessary to apply for LCA.

Benefits and Cost

- High-quality scientific training, reference materials in PDF
- Lunches and Coffee Breaks
- Participation fee 150 EUR

Deadlines and Contact

Please register online by filling in the application form by 1 August 2025. You will be contacted by one of the Workshop Secretaries. For further information, please contact

- Mr Jiří Klemeš (Workshop Director) klemes@prise-know.tech
- Ms Ting Pan (Workshop Secretary) pres.secretary@prise-know.tech
- Application form:

<https://forms.office.com/e/UStPGik35H>

