Trondheim, Norway, 30 June - 3 July 2025

Invited Session: Modelling and Optimization of Deteriorating Inventories

Organized by:

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The inventory management literature often assumes that items can be stocked indefinitely to satisfy future demands. In reality, there is a very large class of products for which this assumption is not appropriate, as they lose their characteristics over time while in stock, becoming partially, or totally, unfit for use. These products are generally said to be deteriorating. The literature differentiates between two types of deterioration: if products decay, a fraction of the stock is lost every time unit, while in the case of a perishable inventory, items keep their usability up to a deterministic or uncertain expiration date (which determines the item's shelf-life), after which the products are not fit for use anymore. Examples of perishable products are food, human blood or photographic films, while alcohol, gasoline, or radioactive substances belong to the family of decaying items. An impressive number of works has been published on this topic over the years.

The session calls for papers that elaborate on the management of deteriorating inventories. The focus is on theoretical contributions that propose mathematical models and optimization methods. Empirical studies that confirm theoretical insights, or reveal new ones, are also appreciated.

Topics may include, but are not limited to:

- Economic production quantity models
- Economic order quantity models
- Lot sizing under uncertainty
- Integrated production-inventory-routing decisions
- Supply chain management
- Multi-item inventory systems
- Omnichannel inventory control
- Pricing of deteriorating inventories
- Data-driven inventory control
- Applications of meta-heuristic algorithms
- Simulation of inventory systems
- Single- and multi-stage inventory systems

INVITATION CODE: xxx

Draft papers reporting original research (limited to 6 pages in IFAC format) are welcome.

When you submit your paper to the IFAC system, you will be required this invitation code in order to associate your paper to the invited session: **https://ifac.papercept.net**

IMPORTANT DATES:

Draft papers/extended abstract submission deadline:	**30.11.2024**
Notifications to authors and registrations open:	**30.01.2025**
Final papers submission deadline:	**28.02.2025**
IFAC MIM 2025 Conference:	**30.06-03.07.2025**

Conference website:
https://conferences.ifac-control.org/mim2025/

Accepted papers will be published open access in Elsevier's IFAC-PapersOnLine. Post-conference special issues for extended versions of accepted papers are planned in IFAC and other high-ranked journals.

Proposal 35 submitted to 11th IFAC Conference on Manufacturing Modelling, Management and Control. Received September 18, 2024.