Proposal for an invited session on "Optimization and Sustainability: Theory and Practice" for IFAC MIM 2019

Invited session identification code kbdiA5m1vG.docx

<u>Session Chair</u>

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Sustainability has emerged as an important research area for system scientist for sustainable development of society on our planet earth. Mathematical foundation of sustainability need to be explored more rigorously and thoroughly. Economists along with ecologists have presented some benchmark for sustainability. Session will explore the impact of investing in -environmental preferences on profitability and greenhouse gas (GHG) emissions through a multi-objective optimization study. Because the optimization includes a tradeoff between resource constraints and performance, a model of sustainability is legitimate.

There is unique combination of optimization and sustainability sciences. The link between them need to be explored. I think it would be of great interest to large number of theoretical and practicing engineers and should attract large number of submissions.

 <u>Topics of interest for the sessions are presented below</u>:

1. Mathematical Foundation of Sustainability: Mathematical Tools for Sustainability
2. Maximization of Profit Vs Sustainability
3. Sustainability Principles, and its effect on design and manufacturing, & other engineering field.
4. Maximization of Recyclability and Reuse for sustainability, profitability, and optimization.,
5. Carbon neutral footprint for sustainable development; engineering product development, life cycle analysis and multi-objective optimization.
6. Revision of Theory of Optimization and optimization model for sustainable development
7. Resources Constrained System Problems, optimization and sustainability
8. Structured Geometric Programming Formulation for sustainability maximization considerations
9. Sensitivity analysis under sustainable considerations; GHG emissions, profitability, and innovation
11. Real world Stochastic problems under sustainability considerations.
12. Profiting from Sustainability; design, manufacturing, and processes
13. Manufacturing Sustainability: Theory and Practices.
Some of the topics of interest in the proposed session. The science of sustainability has assumed great interest and it is important that we in academic community discuss it thoroughly at IFAC MIM 2019.

Submission
Authors interested in submitting their research, refer to www.ifac.control.org. All papers should be two column format as per IFAC manuscript style. The full length draft paper must be submitted by December 15, 2018. All submitted papers will be peer reviewed by IPC members. The corresponding author submits the paper on line as **an invited paper session** with code kbdiA5m1vG.

Important dates:
Deadline for submission   December 15, 2018
Notification of acceptance/rejection   February 20, 2019
Deadline for final submission   March 15, 2019