Operator support for improving energy and material efficiency

The most resource efficient operation of production plants is not easy to identify under varying operating conditions. This study presents an approach for increasing the resource efficiency of the production.

Model identification
- Modelling of unit-operations
- Resource efficient operation is modelled

Visualization of results – A plant operator dashboard
- Transparent documentation promotes acceptance
- Intuitively represents deviations from resource efficient operation

Development of an operator support tool
- Statistical analysis of historical plant data
- Reference set-points are provided to operators

Combining different technologies to save resources

Summary, Results and Outlook
- A toolchain for an operator support platform has been developed
- Live monitoring increases the resource efficiency of the production
- Visualization dashboards have been developed for multiple plants at INEOS in Köln
- Resource consumption of an unit operation could be reduced by 20% in one case
- Development of dashboards for all plants of INEOS in Köln
- Increasing the reliability of the of the root cause analysis to further improve the acceptance

Contact:
Dr.-Ing. Udo Enste, benedikt.beisheim@ineos.com
Jonathan Höges, Dipl. Ing., jonathan.hoeges@leikon.de
Keivan Rahimi-Adli, M.Sc., adli@ineos.com

Developers:
Patrick Schiermoch, M.Sc., patrick.schiermoch@ineos.com
Jonathan Höges, Dipl.-Ing., jonathan.hoeges@leikon.de
Keivan Rahimi-Adli, M.Sc., adli@ineos.com

References:

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 723575.