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## Performance simulation of industrial vegetable oil refining

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This work focuses on the performance analysis of an industrial vegetable oil refinery. Using a commercial process simulator, a process model was developed and validated against actual vegetable oil refinery field data. The simulator allowed investigating both energy and safety aspects related to the presence of residual extraction solvent (extraction grade hexane) in the processed crude vegetable oil. The critical nodes for hexane accumulation in the process were evaluated both considering ordinary operative conditions and undesired process deviations due to increase of the hexane content. In this latter case, the control actions able to restore the normal operation were simulated in terms of increased utility consumption (e.g., motive steam for ejectors and cooling water) or by modifying and optimizing equipment operating conditions. Finally, the possibilities of flammable mixtures formation inside process vent pipes caused by the entrainment of air due strong vacuum conditions, was also investigated.

### Biography

Gabriele Landucci is from Università di Pisa Italy.

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