



**UNIVERSITÉ  
DE GENÈVE**

INSTITUT DES SCIENCES  
DE L'ENVIRONNEMENT

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SÉMINAIRE ÉNERGIE – ENVIRONNEMENT  
Conférences 2021-2022

## **Industrial Energy Efficiency and Renewables Integration using Process Integration**

**Beat Wellig**  
*HSLU*

**Jeudi 23 septembre 2021 à 17h15**

**Cette conférence aura lieu uniquement via Zoom – pas de suivi en présentiel !**

**Lien pour la diffusion en direct avec Zoom :**  
<https://unige.zoom.us/j/65489922494>

**ID de réunion : 654 8992 2494**  
**Code secret : 166760**

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## **L'orateur**

Beat Wellig (\*1969) studied mechanical engineering at the Lucerne University of Applied Sciences and Arts (Hochschule Luzern HSLU) and process engineering at the Swiss Federal Institute of Technology (ETH) Zurich. He completed his doctorate at the Institute of Process Engineering at ETH Zurich in the field of high-pressure process engineering (Transpring Wall Reactor for Supercritical Water Oxidation).

He then worked as a postdoc and lecturer in process engineering and heat transfer at ETH Zurich. From 2003 to 2006 he worked for Ernst Basler + Partner AG in Zurich as a project manager and technical specialist in the fields of environmental, energy and building technology.

Since 2006 Beat Wellig has been Professor of Thermodynamics, Process Engineering and Environmental Engineering at the Lucerne University of Applied Sciences and Arts. He also heads the Competence Centre Thermal Energy Systems & Process Engineering (CC TEVT). His research focuses on thermal separation processes and environmental engineering, process integration and pinch analyses, as well as heat pumps and refrigeration systems.

Beat Wellig has written around 70 articles for scientific conferences and journals to date and has received various awards for his work.

## **La conférence**

Industrial energy use in Switzerland accounts for approximately 20% of the total energy demand of which more than half is used for process heat.

A key to increase energy efficiency and lower CO<sub>2</sub> emissions in industry is process integration using the pinch analysis method. This method is indispensable for evaluating the integration of different renewable energy technologies together with the identification, characterization and utilization of waste heat.

In this presentation, these aspects along with a review of the fundamentals, benefits and opportunities of pinch analysis will be shown. In addition, case studies from Swiss industry will be presented as well as an overview of the energy efficiency potential in Swiss industry that can be achieved.