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# Novel measurement concepts for a visual and thermal characterization of semi-transparent façade systems

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With the increasing number of hot days in the cooling season, a correct use of semi-transparent façade systems to face healthy requirements and ensure comfortable indoor situations is of enormous importance. Thus, a well-planned façade system must fulfill the essential tasks of summer overheat protection through intelligent shading as well as visual requirements such as daylight utilization and glare protection. To be able to characterize and optimize complex façade systems based on these requirements, beside simulations supplementing measurement methods are needed that allow both: a static evaluation of the components in terms of normative characteristic values and KPIs as well as dynamic evaluations to monitor the transient behavior of a façade system during operation.
Within the 5-year EU research project MEZeroE, at the Unit for Energy Efficient Buildings at the University of Innsbruck a "Pilot Measurement and Verification Line" (PM&VL) is established and tested together with industrial partners, which aims to evaluate semi-transparent envelope products from a thermal and visual point of view and to provide product data for manufacturers, engineers and planners. In the sense of an open innovation process, a virtual marketplace will be established together with other research partners within the framework of the research project, where living labs will be installed in addition to other pilot lines with different focal points.
The presentation will give an overview of the project and the novel simulation- and measurement concepts being developed. A focus will be made on the presentation of a novel goniophotometer measurement concept as well as on a newly developed in-situ measurement concept for the acquisition of transient g-values for complex glazing's under installed conditions. As a concluding result, measurement-assisted methods for a visual and thermal characterization of semi-transparent façade systems will be proposed.

## Keyword 1

complex facade system

## Keyword 2

visual characterization

## Keyword 3

thermal characterization

## Keyword 4

measurement

## Keyword 5

## Contact by email

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**Author:** Dr HAUER, Martin (University of Innsbruck, Unit for Energy Efficient Buildings)

**Co-authors:** Mr PLÖRER, Daniel (University of Innsbruck, Unit for Energy Efficient Buildings); Dr PFLUGER, Rainer (University of Innsbruck, Unit for Energy Efficient Buildings)

**Presenter:** Dr HAUER, Martin (University of Innsbruck, Unit for Energy Efficient Buildings)

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