



# Research Success Stories



September 2013

## Experience and tenacity pay off

Imagine a building where heating, cooling, window shades and insulation are all integrated into its façade. The members of the FLUIDGLASS project aim to realize just that vision. On the way to that vision, their endurance has been put to the test.

The history of FLUIDGLASS goes back as far as 1998, when architect Dietrich Schwarz, currently Professor for sustainable design at the University of Liechtenstein, patented the system on which the project is based. Since then, a few research projects, led by the University of Liechtenstein and Schwarz's start-up GLASSX AG, have yielded a proof of concept prototype.



**Dr Daniel Gstöhl**  
FLUIDGLASS coordinator

However, at a certain point, the partners "were convinced that these small projects could only solve single pieces of the puzzle and that they needed something big to develop the whole system", says Daniel Gstöhl, the project coordinator at the University of Liechtenstein.

### Lessons learned

So the partners decided to answer a European project call – unsuccessfully. In 2012, when they found a call that suited even better, they decided to give it another try. This time, their application was very successful. "This shows that endurance and tenacity pay, if you learn your lessons", says Daniel Gstöhl.

It is the first time that an institution from Liechtenstein coordinates

**"Our story shows that experience and tenacity pay."**

such a European project. For the other partners, working in EU projects is relatively new as well. In this situation, the University of Liechtenstein decided to coordinate the

### ABOUT THE PROJECT

FLUIDGLASS aims to construct a fully transparent glass façade that consists of three layers: The first layer, outside the building, contains a circulating fluid that can be dyed serving as both a sun shade and a huge thermal solar collector; the second layer, inside the building, contains a circulating fluid that can be cooled or heated to condition the room; the third layer lies between the other two and makes sure that as little heat as possible is exchanged between the other layers. The potential for energy savings due to novel energy management capabilities is 50 to 70 percent for retrofitting and 20 to 30 percent for new low energy buildings.

project, not the least because that way it could decide on the direction and focus of the whole project.

### Sharing the work

"Inexperience made the application procedure quite challenging", says Daniel Gstöhl. He learned an important lesson from the first application: "The second time, one partner concentrated on the management part of the application – in which he was specialized – while the universities concentrated on the scientific, the industry on the impact part." This way, all partners did what they knew most about.

This strategy resulted in an excellent application review by the European Commission. Among other things, the reviewers are confident that "the project can produce new and innovative solutions which can impact significantly on building energy performance and comfort".

### FACTS AND FIGURES

<b>Project Name:</b>	FLUIDGLASS
<b>Research Area:</b>	FP7-Energy
<b>Organisation:</b>	University of Liechtenstein, Institute of Architecture
<b>Coordinator:</b>	Dr Daniel Gstöhl
<b>Partners:</b>	Mayer Glastechnik, NTB, TU München, GlassX, Hoval, CEA-INES, University of Stuttgart, CNERIC, Alcoa, Amires
<b>Start Date - End Date:</b>	01.09.2013 - 31.08.2017
<b>Duration:</b>	48 months
<b>Project Cost:</b>	5.1 million Euros
<b>Project Funding:</b>	3.9 million Euros
<b>Contract Type:</b>	FP7: Collaborative project

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