

## Short STSM Report Budimir Sudimac

I finished the research at the University Stuttgart, Fakultat 1 Architektur und Stadtplanung, Institut für Baukonstruktion as planned, prof. Stefan Behling. I have been there from October the 1<sup>st</sup> to November 15<sup>th</sup>.

During my visit, I was working on survey of the German solar thermal collector market, concentrating on flat plate, unglazed flat plates and evacuated tubes systems, mainly targeted at the flexibility offered by collector manufacturers in term of architectural integration freedom. This survey represents the integrity of most of available solar thermal collectors, indicating the novel collectors responding to facade integration issues should be developed. The new collectors should answer to the technical constraints of their specific solar thermal technology, but should also become architectural elements, conceived to be integrated into the building.

Identification and thorough examination of existing thermal collectors is very important for identification of their global drawbacks and limitations and will significantly help in determining major guidelines for future development and modifications of thermal collectors.

During my stay I am familiarized with solar collector world market and their integration in facades; solar protection systems and daily lightening as well as transparent solar protection systems. I also became acquainted with methodology of scientific and research work

During this research I visited Würth Solar factory in Germany that produce CIS Photovoltaikmoduls, I also visited a laboratory in Institute on Mechanical Engineering Faculty with artificial Sun and is a leading scientific institution in developing passive solar systems. I made a comparative analysis of existing technologies that are dominant in thermal collectors design and made identification of benefits and drawbacks regarding their implementation into architectural solutions.

My visit to the Stuttgarth University was an excellent opportunity for me to get acquainted with Professor Stefan Behling's work, worldly recognized architect and scientist in the area of solar energy, energy efficiency and evolution of sustainable architecture.

This work will be beginning of my PhD thesis which I will currently work on the Faculty of Architecture of the Belgrade University. My thesis will be great help in both science and practice in the field of application solar energy in architecture and it will be very important for research and development work on the Faculty of Architecture. My mentor is Professor Aleksandra Krstic-Furundžic who is a member of COST. This research is very important for Serbia to keep abreast of developments of EU countries.

This research will fruitful for the project of National Energy Efficiency Program called "Development and demonstration of hybrid active and passive system for solar heating,

solar cooling, ventilation, artificial lighting, and other electrical energy applications”. This project started since June 2006 and will last three year. I am one of participants in this project. Faculty of Architecture is also included in this project.

I will be able to implement these experiences in my PhD and mentioned ongoing project of Architectural Faculty and Ministry of Science and Technology.

Further work on this topic should be related to new methods in integration of thermal collectors into building envelope and urban structures, and to develop new types of solar thermal collectors, integrated into solar protection systems as well as development of new methods of solar protection systems in sustainable architecture.