









Chavdar SLAVOV

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KEY WORDS

Academic: biophysics, physical chemistry, spectroscopy, kinetics

Research: ultrafast dynamics, photochemistry, photoresponsive systems, light energy conversion

EDUCATION

2009 PhD (Dr. rer. nat.) – Heinrich Heine University, Düsseldorf, Germany

- Thesis: “On the ultrafast kinetics of the energy and electron transfer reactions in Photosystem I”, ([view](#)), Supervisor – [Alfred R. Holzwarth](#)

2005 M. Sc. BIOPHYSICS – Sofia University, Bulgaria

- Thesis: “Temperature effect on the primary photosynthetic processes”, Supervisor – [Vasilij Goltsev](#)

2003 B. Sc. MOLECULAR BIOLOGY – Sofia University, Bulgaria

APPOINTMENTS

2022 - present	Assistant Professor	Department of Chemistry, University of South Florida
2010 – 2022	Research Associate	Institute of Physical and Theoretical Chemistry, Goethe University, Frankfurt, Germany, Group of Prof. Josef Wachtveitl
2009 – 2010	Postdoc	Max Planck Institute for Chemical Energy Conversion, Mülheim a.d. Ruhr, Germany, Group of Prof. Alfred. R Holzwarth

SCIENTIFIC PROJECTS ([summary link](#))

PHOTOSWITCHES AND PHOTOSWITCHABLE CONSTRUCTS

- **Molecular mechanisms** of operation of photoswitches
- **Coherent phenomena** in photoactive systems
- **Application** of photoswitches for **optical control** of bio(chemical) reactions and nanostructures
- **Dynamics** of larger **photoresponsive nanostructures** and molecular assemblies

PHOTORECEPTORS

- Photoconversion dynamics of **photoreceptors** from the phytochrome and rhodopsin families

DEVELOPMENT OF ANALYSIS TOOLS FOR TIME-RESOLVED DATA ([OPTIMUS](#))

OTHER: Artificial and natural **light-harvesting** systems, Excitation energy and electron transfer, Mechanisms of **photoprotection**

EXPERIENCE

Experimental techniques

- femtosecond pump (UV/VIS) – probe (UV/VIS/IR) transient absorption
- sub-picosecond time-resolved fluorescence
- nanosecond laser flash photolysis
- Stationary IR and VIS spectroscopy

Installation and development of set-ups

- Set-up for coherent control and multidimensional spectroscopy experiments (under construction)
- femtosecond transient absorption set-up
- synchroscan streak camera set-up for sub-ps fluorescence measurements
- multichannel single photon counting set-up for picosecond fluorescence measurements

Analysis of time-resolved data – [OPTIMUS](#)

- Global analysis, kinetic modeling, model-independent analysis
- Development of software for analysis of FROG traces and recovery of laser pulse shapes

SCIENTIFIC PROJECTS PREPARATION

- University of South Florida, New Research Grant on Photopharmacology.
- “Photochromism of molecular switches with potential for application in biological systems”, DFG¹ Grant WA 1850/4-1 (funding for a Research Associate position and equipment)
- “Coherent phenomena in photoresponsive compounds”, DFG¹ Grant WA 1850/4-2 (funding for Research Associate position and equipment)
- “Optical control on the nanoscale via photoresponsive compounds”, DFG¹ Grant WA 1850/4-3 (funding for a Research Associate position)
- Contribution to preparation of other DFG¹ (Sonderforschungsbereich and Schwerpunktprogramme) and LOEWE¹ projects.

TEACHING AND MENTORING ACTIVITIES

- **Undergraduate** – Physical chemistry lectures
- **Graduate** – Photochemistry
- **Mentoring** – apprentices, bachelor, master, and PhD students

COMMUNITY INVOLVEMENT

Peer-review for journals from **American Chemical Society, Elsevier, IOP Publishing, Nature Publishing Group, PLOS, Royal Society of Chemistry, Wiley**, and funding agencies.

Open-door days at Frankfurt University - Spectroscopic experiments demonstrations.

Middle School Science Night with R’club – at Morgan Fitzgerald, Oak Grove, Seminole, Thurgood Marshall, and Tyrone Middle Schools in Pinellas County, FL – Properties of light experiments.

Conference organization and supervision: 16th Photosynthesis Workshop ‘Nord-West’, 2007, Mülheim/Ruhr, Germany; 22nd Raymond N. Castle Student Research Conference, 2024.

PUBLICATIONS

<https://optimusfit.org/index.php/publications>

INVITED AND CONFERENCE TALKS, AWARDS

<https://optimusfit.org/index.php/talks>

¹ DFG – Deutsche Forschungsgemeinschaft (German Science Foundation), Landesprogramm LOEWE – Hessian Ministry research funding