

Advanced Vibrational Spectroscopies – from Developments in Physical Chemistry to Biomedical Applications

849. WE-Heraeus-Seminar

**22 Feb - 26 Feb 2026
at the Physikzentrum Bad Honnef/Germany**

The WE-Heraeus Foundation supports research and education in science, especially in physics.
The Foundation is Germany's most important private institution funding physics.

**WILHELM UND ELSE
HERAEUS-STIFTUNG**



Program

Sunday, February 22, 2026

17:00 – 21:00 Registration

18:00 – 21:00 *BUFFET SUPPER*

Monday, February 23, 2026

08:00 *BREAKFAST*

08:55 – 09:10 Scientific organizers **Opening, Welcome and Intro**

09:10 – 10:20 Steven Boxer **Vibrational Stark effect spectroscopy
measures local electric fields in diverse
environments**

10:20 – 10:50 *COFFEE BREAK*

10:50 – 11:40 Thomas Elsaesser **Electric interactions and vibrational
excitations in liquids and proteins
probed by ultrafast terahertz methods**

11:40 – 12:30 Peter Vöhringer **The invisible made visible with invisible
light: Photochemical dynamics of
transition metal complexes**

12:30 *LUNCH*

Program

Monday, February 23, 2026

14:00 – 14:50	Marius Horch	2D-IR Spectroscopy of Bioorganometallic Targets
14:50 – 15:40	Martina Havenith	Terahertz calorimetry spotlights the role of water in biological processes
15:40 – 16:00	Lorenz Mattes	Temperature-jump dual-comb spectroscopy for time-resolved studies of peptide folding
16:00 – 16:30	<i>COFFEE BREAK</i>	
16:30 – 17:20	Ioachim Pupeza	Field-Resolved Spectroscopy for Biology and Medicine
17:20 – 18:10	Thomas Ebbesen	Manipulating Matter by Vibrational Strong Coupling to the Vacuum Electromagnetic Field
18:30	<i>DINNER</i>	

Program

Tuesday, February 24, 2026

08:00 *BREAKFAST*

08:55 – 09:10 Intro

09:10 – 10:00 Hatice Altug **Nanophotonic metasurfaces for
surfaced enhanced spectroscopy,
biosensing and microarrays**

10:00 – 10:20 Gergo Peter Szekeres **Dissecting the local and
macromolecular properties of
glycosaminoglycans with infrared
spectroscopy**

10:20 – 10:50 ***Conference Photo and COFFEE BREAK***

10:50 – 11:40 Alexander Fellows **Azimuthal-scanning and phase-
resolved vibrational sum-frequency
microscopy**

11:40 – 12:30 Patrycja Kielb **Raman spectroscopy of UV-absorbing
chromophores - from UV resonance
Raman towards UV surface-enhanced
esonance Raman spectroscopy**

12:30 *LUNCH*

Program

Tuesday, February 24, 2026

14:00 – 14:50	Zsuzsanna Heiner	Real-time and label-free monitoring of enzymatic cleavage at a model membrane interface
14:50 – 15:40	Tilman Kottke	Time-resolved infrared spectroscopy on soluble receptors in living cells
15:40 – 16:00	Izabella Brand	Spectroelectrochemical characterization of rhodopsin membrane protein in reconstituted model membranes
16:00 – 16:30	<i>COFFEE BREAK</i>	
16:30 – 18:30	Poster session	
18:30	<i>HERAEUS DINNER at the Physikzentrum (cold and warm buffet, with complimentary drinks)</i>	

Program

Wednesday, February 25, 2026

08:00	<i>BREAKFAST</i>	
08:55 – 09:10	Intro	
09:10 – 10:00	Mischa Bonn	Molecular mechanics of aqueous interfaces from surface vibrational spectroscopy
10:00 – 10:20	Karolina Augustyniak	The fate of stem cell: FTIR and Raman imaging-based strategy to probe cell differentiation
10:20 – 10:50	<i>COFFEE BREAK</i>	
10:50 – 11:40	Rainer Hillenbrand	Scattering-type near-field optical nanospectroscopy
11:40 – 12:30	Janina Kneipp	Spectroscopy in the local fields of plasmonic structures for the characterization of biomolecules and cells
12:30	<i>LUNCH</i>	
14:00 – 14:50	Francesco Simone Ruggeri	Nano-Chemical Imaging & Spectroscopy of Protein Self-assembly in Neurodegeneration
14:50 – 15:40	Caitlin Davis	Optical photothermal infrared imaging using metabolic probes in biological systems
15:40 – 16:10	<i>COFFEE BREAK</i>	

Program

Wednesday, February 25, 2026

16:10 – 17:00	Daniela Täuber	Pioneering biomedical application of high-precision mid-IR photoinduced force microscopy (PiF-IR)
17:00 – 17:50	Hervé Rigneault	Super-resolved wide field multiphoton and coherent Raman imaging using speckle light
17:50 – 18:10	Scientific organizers	Poster Awards Concluding remarks
18:30	<i>DINNER</i>	

Thursday, February 26, 2026

08:00 *BREAKFAST*

End of seminar and departure