

**Detailed program / time schedule**

Sunday	24 <sup>th</sup> March
15:00 – 18:00	<b>Registration</b>
18:00 – 18:30	<b>Opening Ceremony</b> <ul style="list-style-type: none"> <li>• Hartwig Schulz (Chair IPSC-2019, JKI, Germany)</li> <li>• Frank Ordon (President JKI, Germany)</li> <li>• Karl Mühling (President DGQ, Germany)</li> <li>• András Gorzsás (Head ISPS, Umeå University, Sweden)</li> </ul>
Ca. 18:30	<b>Welcome plenary lecture</b> Spectroscopy in plant-animal interactions": looking at the natural world as a herbivore <b>William Foley</b>
Ca. 20:00	<b>Icebreaker</b>
Monday	25 <sup>th</sup> March
<b>Session 1 - NIR Spectroscopy / Imaging</b> (Co-chairs: Huck/Siesler)	
09:00 – 09:40	<i>01-01 - Plenary lecture</i> Hand-held vibrational spectrometers: state-of-the art instrumentation and novel applications <b>Heinz Siesler</b>
09:40 – 10:10	<i>01-02- Invited lecture</i> Recent advances in vibrational spectroscopic imaging studies of medicinal plants <b>Christian Huck</b>
10:10 – 10:30	<i>01-03</i> Running a network of NIRS instruments for forages and other plant materials - Quality control <b>Peter Tillmann</b>
10:30 – 11:00	<b>Coffee break</b> sponsored by <i>Plants</i> ( MDPI AG, Basel, Switzerland)
11:00 – 11:20	<i>01-04</i> Application of NIR technology to predict minor components in raw and processed potatoes <b>Inga Smit</b>
11:20 – 11:40	<i>01-05</i> Fluorescence ratiometry and NIR transmission in combination allow in-situ analysis of leaf apoplastic pH under controlled changes of leaf water content <b>Hartmut Kaiser</b>
11:40 – 12:00	<i>01-06</i> Contribution of infrared spectroscopy to evaluate the variability of quality traits of the fresh and processed apples <b>Weije Lan</b>
12:00 – 13:30	<b>Lunch break / Lunch &amp; Learn Bruker Optic GmbH</b>
<b>Session 2 - Hyperspectral imaging</b> (Co-chairs: Devaux/Vermaak)	
13:30 – 14:10	<i>02-01 - Plenary lecture</i> Hyperspectral imaging in combination with chemometric data analysis - a powerful tool in the quality control of herbal medicines <b>Ilze Vermaak</b>

Monday	25 <sup>th</sup> March
<b>Session 2 - Hyperspectral imaging</b> (Co-chairs: Devaux/Vermaak)	
14:10 – 14:40	<i>02-02 - Invited lecture</i> Multiscale and multimodel spectral imaging for mapping cell wall polymers in plant organs <b>Marie-Françoise Devaux</b>
14:40 – 15:00	<i>02-03</i> Autofluorescence multispectral image analysis at the macroscopic scale for tracking wheat grain tissues: a novel approach for a more specific identification of wheat grain dietary fibre <b>Fabienne Guillon</b>
15:00 – 15:30	<b>Coffee break</b> sponsored by <i>Plants</i> ( MDPI AG, Basel, Switzerland)
15:30 – 15:50	<i>02-04</i> Early detection of the grapevine disease Esca using hyperspectral sensors <b>Nele Bendel</b>
15:50 – 16:10	<i>02-05</i> Detection of anomalies in bulk materials using hyperspectral imaging <b>Julius Krause</b>
16:10 – 16:30	<i>02-06</i> Visual quality assessment of black cohosh using hyperspectral imaging and chemometrics <b>Sidonie Tankeu</b>
17:00 – 19:00	<b>General meeting of DGQ members</b>
Tuesday	26 <sup>th</sup> March
<b>Session 3 - Raman Spectroscopy / Imaging</b> (Co-chairs: Baranska/Gierlinger)	
09:00 – 09:40	<i>03-01 - Plenary lecture</i> Raman imaging of plant cell wall: where we stand and how to move forward <b>Notburga Gierlinger</b>
09:40 – 10:10	<i>03-02 - Invited lecture</i> Raman microscopy combined with AFM to get a deeper insight into complex biological samples <b>Malgorzata Baranska</b>
10:10 – 10:30	<i>03-03</i> In-capsule quantitation of EPA and DHA by handheld Raman spectroscopy: fish oils to algal oils <b>Daniel P. Killeen</b>
10:30 – 10:50	<i>03-04</i> Lignin - I see you! <b>Peter Bock</b>
10:50 – 11:20	<b>Coffee break</b>
11:20 – 11:40	<i>03-05</i> Combined bioorthogonal labeling, Raman spectroscopy and fluorescence histochemistry provide detailed spatial information on lignification in plant cell walls <b>Anne-Sophie Blervacq</b>

Tuesday	26 <sup>th</sup> March
<b>Session 3 - Raman Spectroscopy / Imaging</b> (Co-chairs: Baranska/Gierlinger)	
11:40 – 12:00	03-06 Chemical signature in xylem cell wall of <i>Salix glauca</i> L. due to <i>Eurois occulta</i> L. outbreaks <b>Lisbeth Thygesen</b>
12:00 – 12:20	03-07 Raman spectroscopy shows adaption of pollen composition in <i>Poa alpina</i> <b>Sabrina Diehn</b>
12:20 – 14:00	<b>Lunch break / Lunch &amp; Learn WITec GmbH</b>
<b>Session 4 - FTIR Spectroscopy / Imaging</b> (Co-chairs: Krähmer/Schulz)	
14:00 – 14:20	04-01 Plant roots and FTIR – analyzing species composition and root biomass in peat soil <b>Petra Straková</b>
14:20 – 14:40	04-02 Vibrational spectroscopy of pollen as a tool for reconstructing solar-ultraviolet irradiance <b>Boris Zimmermann</b>
14:40 – 15:00	04-03 MD Dating – Dating of wood based on its molecular decay (MD) measured using FTIR spectroscopy <b>Franziska Reiter</b>
15:00 – 15:20	04-04 Quantitative FTIR imaging displays the sucrose landscape within and along its allocation pathway <b>André Gündel</b>
15:20 – 15:40	<b>Coffee break</b>
15:40 – 16:00	04-05 ATR-FTIR imaging reveals cell wall layer-specific chemotypes in poplar tension wood <b>Clément Cuello</b>
16:00 – 16:20	04-06 Nano-FTIR Spectroscopy of in situ and extracted silica phytoliths <b>Victor Manuel Rodriguez</b>
16:20 – 16:40	04-07 Understanding the formation of highly durable heartwood in larch by use of synchrotron infrared imaging and multivariate resolution techniques <b>Sara Piqueras Solsona</b>
16:40 – 18:30	<b>Poster session</b>

Wednesday	27 <sup>th</sup> March
<b>Session 5 - Chemometrics and Remote sensing (Co-chairs: Beleites/Gorzsás)</b>	
09:00 – 09:40	<i>05-01 - Plenary lecture</i> Multivariate analytical strategies for spectral data of plants <b>András Gorzsás</b>
09:40 – 10:10	<i>05-02 - Invited lecture</i> Experimental design considerations for developing spectroscopic calibration models of plant material <b>Claudia Beleites</b>
10:10 – 10:30	<i>05-03</i> Measurement uncertainty for NIRS measurements <b>Peter Tillmann</b>
10:30 – 11:00	<b>Coffee break</b>
11:00 – 11:20	<i>05-04</i> Identification and quantification of heartwood extractives of Norway spruce ( <i>Picea abies</i> ) and hybrid larch ( <i>Larix gmelinii x japonica</i> ) clones using GC-MS and MCR-ALS <b>Sophie Füchtner</b>
11:20 – 11:40	<i>05-05</i> Establishment of a field spectral library of agricultural crops in Germany for monitoring biophysical parameters at different spatial scales <b>Heike Gerighausen</b>
11:40 – 12:00	<i>05-06</i> Forest regeneration after fire in semi arid land in the north west of Algeria - analysis with remote sensing data <b>Ahmed Zegrar</b>
12:00 – 13:30	<b>Lunch break / Lunch &amp; Learn Agilent Technologies Deutschland GmbH</b> 12:00 – 12:20 – Lunch & welcome 12:20 – 12:45 – Imaging 12:45 – 13:10 – Handheld/UV + presentation 13:10 – 13:20 – Q/A, close, Thank you & feedback
<b>Session 6 - GC-/LC-MS profiling (Co-chairs: Robbat/Fiehn)</b>	
13:30 – 14:10	<i>06-01 - Plenary lecture</i> MassBank of North America: using untargeted metabolomics and multistage fragmentation mass spectral libraries to annotate natural products in plants <b>Oliver Fiehn</b>
14:10 – 14:40	<i>06-02 - Invited lecture</i> Climate effects: changes in the tea metabolome <b>Albert Robbat</b>
14:40 – 15:00	<i>06-03</i> Metabolomics as tool to improve food quality <b>Roland Mumm</b>
15:00 – 15:30	<b>Coffee break</b>
15:30 – 15:50	<i>06-04</i> Oxylipidomics – large scale determination of oxidized lipids using high res MS and MS/MS <b>David Riewe</b>

Wednesday		27 <sup>th</sup> March	
<b>Session 6 - GC-/LC-MS profiling</b> (Co-chairs: Robbat/Fiehn)			
15:50 – 16:10	06-05	Effect of volatile organic compounds and taste-related primary metabolites on sensory perception of tomato cultivars in organic low-input system <b>Cut Erika</b>	
16:10 – 16:30	06-06	Vast amount of metabolites determined by UPLC-MS from Scots pine roots associated bioactive endophytic fungi <b>Jenni Tienaho</b>	
19:00	<b>Social Dinner – Boat tour on the river Spree</b>		
Thursday		28 <sup>th</sup> March	
<b>Session 7 - NMR Spectroscopy / MS imaging</b> (Co-chairs: Deborde/Schneider)			
09:00 – 09:40	07-01 - Plenary lecture	NMR in plant science - methods and selected examples <b>Bernd Schneider</b>	
09:40 – 10:10	07-02 - Invited lecture	An overview of NMR applications in metabolite profiling of small molecules for plant metabolism studies <b>Catherine Deborde</b>	
10:10 – 10:30	07-03	From <i>Arnica montana</i> to <i>Taraxacum koksaghyz</i> – NMR based metabolite profiling supporting breeders <b>Roland Geyer</b>	
10:30 – 11:10	07-04 - Plenary lecture	Mass spectrometry imaging in chemical ecology <b>Aleš Svatoš</b>	
10:30 – 11:00	<b>Coffee break</b>		
11:40 – 12:30	<b>Various remarks</b>	DGQ price, poster prices, next IPSC, next DGQ meeting	
12:30 – 13:00	<b>Closing remarks</b>	Hartwig Schulz	