

# SAW Sensor & Actuator Symposium 2021. Live in Dresden. Followed from all over the world.

October 14+15, 2021 in Dresden, Germany - organized by Silicon Saxony, SAWLab Saxony, SAW Components

SAW Symposium 2021 topic areas:	
I:	Design, concepts and materials for SAW-based sensors and actuators
II:	SAW sensors for physical, chemical, biological applications and gases
III:	SAW-based actuators, atomizers and microfluidics
IV:	Industrial applications and deployments of SAW



## SAW Symposium 2021 Program

**Thursday, October 14, 2021**

**Time** >> SAW Symposium schedule is given in Dresden local time which has the same time as Berlin = Central European Summer Time (CEST=UTC+2)

**08:00 Registration (with coffee)**

**09:00 Opening** Hagen Schmidt SAWLab Saxony

**09:10 Session 1: Design, concepts and materials for SAW-based sensors and actuators**

09:10	Metallization Systems for High Temperature Surface Acoustic Wave Sensor Devices	Marietta Seifert	IFW Dresden	I
09:25	Temperature measurement and position with wireless SAW sensors on Piezoelectric-On-Insulator substrates	Gabrielle Aspar	Frec n sys	I
09:40	Advanced ferroelectric Li(Nb,Ta)O <sub>3</sub> crystals: growth, structure, and acoustic properties	Dmitry Roshchupkin	Inst. of Microelectr. Techn. and High-Purity Materials; RAS	I
09:55	Surface Acoustic Wave resonators for Wireless Sensor Network applications in the 433.92 MHz ISM band	Evangelos Moutoulas	University of Southampton	I
10:10	Simulation of SAW devices: A review with examples	Sergio Gutierrez	IMTEK- University of Freiburg	I

10:25	Development of a ceramic based packaging concept for sensors up to 600 °C	Lars Rebenklau	FhG IKTS	I
10:40	Innovative NiAl alloy electrodes to push the limits of LiNbO3-based high-temperature SAW sensors	Jordan Maufay	Université de Lorraine	I
10:55	Passive RADAR interrogation of passive cooperative targets: long range illumination of SAW delay lines using high power sources	Jean-Michel Friedt	FEMTO-ST	I

11:10	<b>Session 2: Flash talks for Poster Presentations (all topic areas)</b> <i>(additional virtual poster presentation on Friday, 15, 11:00 - 12:00)</i>	<b>(see detailed flash talk schedule at end of program)</b>		
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**12:00 Lunch**

**13:00 Virtual Networking / Chat Roulette (part 1/2)**

13:15	<b>Session 3: SAW sensors for physical, chemical, biological applications and gases</b>			
13:15	High temperature sensor exploiting hybrid BAW/SAW thin piezoelectric film transducer	Vladimir Pashchenko	Silicon Austria Labs	II
13:30	Surface acoustic wave sensors for high-temperature application based on novel material systems	Barbara Leszczynska	IFW Dresden	II
13:45	Sensing Small Magnetic Fields with Surface Acoustic Waves	Viktor Schell	Kiel University	II
14:00	Temperature and strain characteristics of SAW-RFID onto industrial metallic part for SHM applications	Prince Mengue	Université de Lorraine	II
14:15	Influence of parasitic modes in SAW resonators on the measurement accuracy of wireless time domain sampling readers	Fabian Lurz	TU Hamburg	II
14:30	<b>KEYNOTE: Magnetic SAW Sensors : State of the art, trends and potential applications</b>	<b>Omar Elmazria</b>	<b>Université de Lorraine</b>	<b>II</b>

**15:20 Coffee break**

15:35	<b>Session 4: Industrial exhibition introduction</b> <i>(industrial exhibitor pitch talks)</i>			
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16:00	<b>Session 5: Industrial applications and deployments of SAW</b>			
16:00	Investigation of wireless propagation for industrial application of SAW sensors near metallic structures	Niels Neumann	TU Dresden	IV
16:15	Automotive Test Bench Measurements with SAW Sensor Systems	René Fachberger	sensideon GmbH	IV
16:30	Zero-current power distribution line monitoring with SAW sensors	Jacqueline Hines	SenSanna Incorporated	IV
16:45	Aviana's Novel SAW-Based Pegasus Digital Biosensing Platform for the Rapid and Portable Detection of SARS-CoV-2 and other Infectious Diseases	Anand Singh	Aviana	IV

**18:00 Social event & Networking dinner (details t.b.a.)**

**Friday, October 15, 2021**

**08:00 Registration**

09:00	<b>Session 6: Industrial applications and deployments of SAW</b>			
09:00	<b>KEYNOTE: SAW Temperature Measurement in Laboratory Applications</b>	<b>Daryl Williams</b>	<b>Surface Measurement Systems Limited</b>	<b>IV</b>
09:50	<b>Session 7: SAW-based actuators, atomizers and microfluidics (part I)</b>			
09:50	Acoustofluidic Blood Cell Sorting with Mass-producible SAW Chips	Melanie Colditz	IFW Dresden	III
10:05	Simulation of thermo-acousto-fluidic interaction in wells to predict physical phenomena acting on biological cells	Spencerh Bidouba-Sanvany	Institut Jean Lamour	III
10:20	Role of Diffraction Driven Mechanisms in Surface Acoustic Waves Microfluidics	Armaghan Fakhfour	IFW Dresden	III
10:35	Numerical and experimental consideration of acoustic wave propagation in liquid/glass/liquid/piezoelectric substrate structure for digital microfluidic systems	Jun Kondoh	Shizuoka University	III

**11:00 Session 8: Virtual Poster Session & Industrial Exhibition**  
**12:00 (all Poster contributions and Industrial Exhibitors in parallel virtual rooms)**

**12:00 Lunch**

**13:00 Virtual Networking / Chat Roulette (part 2/2)**

<b>13:30</b>	<b>Session 9: SAW-based actuators, atomizers and microfluidics (part II)</b>			
13:30	Standing surface acoustic wave (sSAW) nebulization at controlled air humidity	Mehrzad Roudini	IFW Dresden	III
13:45	In vitro Rayleigh-SAW stimulation of osteoblasts	Denis Beyssen	Institut Jean Lamour	III
14:00	SAW-based 2D single cell patterning: Measurement of position and temperature of trapped particles	Zhichao Deng	TU Ilmenau	III
14:15	Acoustic flow in porous media	Ofer Manor	Technion	III

**14:30 Coffee break**

<b>14:45</b>	<b>Session 9: SAW-based actuators, atomizers and microfluidics (part II, cont.)</b>			
14:45	<b>KEYNOTE: A fourth type of acoustic streaming mechanism supports the dynamic wetting of nanochannels in the presence of surface acoustic waves</b>	<b>Ofer Manor</b>	<b>Technion - Israel Institute of Technology</b>	<b>III</b>

**15:40 Closing session**

<b>11:10</b>	<b>Flash talk schedule for Poster Presentations</b>			
<b>12:00</b>	<b>(3 min per poster contribution)</b>			
	<b>Thursday, October 14, 2021</b>			
	Strain SAW Sensors Based on Langasite Substrate for High Temperature Applications	Baptiste Paulmier	Université de Lorraine	II
	Acoustic enhancement of electrochemical processes	Johannes Landskron	ISAT Coburg	III
	Volumetric velocity and temperature measurements in SAW-based microfluidic devices	Jörg König	TU Ilmenau	III

Aviana's Pegasus Digital Biosensing Platform: Applying SAW technology to quickly identify Lyme Disease bacteria	Vanaja Ragavan	Aviana	IV
Acoustic loss in CTGS piezoelectric single crystals	Andrei Sotnikov	IFW Dresden	I
High-temperature stability of electrical and electromechanical properties of LiNb <sub>0.88</sub> Ta <sub>0.12</sub> O <sub>3</sub>	Yuriy Suhak	Clausthal University of Technology	I
Scanning Electron Microscopy and X-Ray Diffraction Study of Surface Acoustic Wave Propagation in LiNbO <sub>3</sub> and LiTaO <sub>3</sub> Crystals	Dmitry Roshchupkin	Inst. of Microelectronics Techn. and High-Purity Materials	I
SAW-PnC-Sensor	Ralf Lucklum	TU Magdeburg	I
The probability characteristics of the RFID SAW reader device under the influence of the industrial noise	Alexander Sorokin	State University of Aerospace Instrumentation	I