

List of Publications

SAWtrain Network

Status: February 6, 2019

A list of the publications and contributions to conferences, workshops, and meetings of the SAWtrain project, ordered according to author and date.

The name of the Early Stage Researcher is highlighted in **bold**. Please refer to <http://www.sawtrain.eu/about-us/#fellows> for more information about each individual researcher.

Please note that the access to some of the links (i.e. those to [https://kohlenstoff.physik.uni-augsburg.de/...](https://kohlenstoff.physik.uni-augsburg.de/)) requires special permission.

Articles

Arvidsson-Shukur, D. R. M., **Lepage, H. V.**, Owen, E. T., Ferrus, T., and Barnes, C. H. W. (2017). Protocol for fermionic positive-operator-valued measures. *Physical Review A*, 96(5). <https://doi.org/10.1103/PhysRevA.96.052305>

Caliendo, C., and **Hamidullah, M.** (2016). "A Theoretical Study of Love Wave Sensors Based on ZnO-Glass Layered Structures for Application to Liquid Environment." *Biosensors MDPI*. <https://doi.org/10.3390/bios6040059>

———. (2017). "Zero-group-velocity acoustic waveguides for high-frequency resonators". *Journal of Physics D: Applied Physics*, 50(47). <https://doi.org/10.1088/1361-6463/aa900f>

———. (2018) SAWtrain Research Highlight 6: "Zero group velocity acoustic waveguides for high frequency resonators", <https://www.sawtrain.eu/wp-content/uploads/2018/08/SAWtrain-Research-Highlight-6-Zero-group-velocity-acoustic-waveguides-for-high-frequency-resonators.pdf>

———. (2018) "Pressure sensing with zero group velocity lamb modes in self-supported a-SiC/c-ZnO membranes" *Journal of Physics D: Applied Physics*, 51(38). <https://doi.org/10.1088/1361-6463/aad6f3>

———. (2018) SAWtrain Research Highlight 8: "Pressure sensing with zero group velocity lamb modes in self-supported a-SiC/c-ZnO membranes", https://www.sawtrain.eu/wp-content/uploads/2018/12/SAWtrain-Research-Hightlight-8-Pressure-sensing-with-zero-group-velocity-Lamb-modes-in-self-supported-a-SiC_c-ZnO-membranes.pdf

Caliendo, C., **Hamidullah, M.**, and Laidoudi, F. (2017a). "Amorphous SiC/c-ZnO-Based Quasi-Lamb Mode Sensor for Liquid Environments." *Sciforum Electronic Conference Series 3: 1*. <https://doi.org/10.3390/s17061209>

- . (2017b). “Love Wave Sensor Based on PMMA/ZnO/Glass Structure for Liquids Sensing.” *Sciforum Electronic Conference Series* 3: 1. <https://doi.org/10.3390/ecsa-3-C005>
- Caliendo, C., **Hamidullah, M.**, and Mattioli, F. (2016). Finite Element Modeling and Synthesis of c-axis Tilted AlN TFBAR for Liquid Sensing Applications. In *Procedia Engineering* (Vol. 168, pp. 1032–1035). Elsevier Ltd. <https://doi.org/10.1016/j.proeng.2016.11.333>
- Edlbauer, H.**, Takada, S., Roussely, G., Yamamoto, M., Tarucha, S., Ludwig, A., Bäuerle, C. (2017). Non-universal transmission phase behaviour of a large quantum dot. *Nature Communications*, 8(1). <https://doi.org/10.1038/s41467-017-01685-z>
- . (2018). SAWtrain Research Highlight 2: “Non-universal transmission phase behaviour of a large quantum dot.” Retrieved from <https://www.sawtrain.eu/research-highlights/SAWtrain-Research-Highlight-2-Non-universal-transmission-phase-behaviour-of-a-large-quantum-dot.pdf>
- Fandan, R.**, Pedros, J., Schiefele, J., Bosca, A., Martinez, J., and Calle, F. “Acoustically- driven surface and hyperbolic plasmon-phonon polaritons in graphene/h-BN heterostructures on piezoelectric substrates”. In: *Journal of Physics D* 51 (2018). <https://doi.org/10.1088/1361-6463/aab8bd>.
- . (2018) SAWtrain Research Highlight 4: “Acoustically- driven surface and hyperbolic plasmon-phonon polaritons in graphene/h-BN heterostructures on piezoelectric substrates”.
- Hernández-Mínguez, A. , **Liou, Y.-T.** and Santos, P. V. “Interaction of surface acoustic waves with electronic excitations in graphene” *J. Phys. D: Appl. Phys.* 51, 383001 (2018) <https://doi.org/10.1088/1361-6463/aad593>
- Kuznetsov, A. S., **Helgers, P. L. J.**, Biermann, K., and Santos, P. V. (2018). Quantum confinement of exciton-polaritons in a structured (Al,Ga)As microcavity. *Physical Review B*, 97(19). <https://doi.org/10.1103/PhysRevB.97.195309>
- Lee, J. P., Wells, L. M., **Villa, B.**, Kalliakos, S., Stevenson, R. M., Ellis, D. J. P., Farrer, I., Ritchie, D. A., Bennett, A. J., and Shields, A. J. “*Controllable Photonic Time-Bin Qubits from a Quantum Dot*”. *Phys. Rev. X* 8, 021078 <https://doi.org/10.1103/PhysRevX.8.021078>
- . (2018) SAWtrain Research Highlight 7: “Controllable Photonic Time-Bin Qubits from a Quantum Dot” <https://www.sawtrain.eu/wp-content/uploads/2018/08/SAWtrain-Research-Highlight-7-Controllable-Photonic-Time-Bin-Qubits-from-a-Quantum-Dot-BrunoVilla.pdf>
- Liou, Y. T.**, Hernández-Mínguez, A., Herfort, J., Lopes, J. M. J., Tahraoui, A., and Santos, P. V. (2017). Acousto-electric transport in MgO/ZnO-covered graphene on SiC. *Journal of Physics D: Applied Physics*, 50(46). <https://doi.org/10.1088/1361-6463/aa8e8a>
- . (2017). SAWtrain Research Highlight 3: Acousto-electric transport in MgO/ZnO-covered graphene on SiC. <https://www.sawtrain.eu/wp->



[content/uploads/2018/06/SAWtrain-Research-Highlight-3-Acousto-electric-transport-in-epitaxial-graphene-coated-with-MgOZnO-Liou-1.pdf](https://www.sawtrain.eu/wp-content/uploads/2018/06/SAWtrain-Research-Highlight-3-Acousto-electric-transport-in-epitaxial-graphene-coated-with-MgOZnO-Liou-1.pdf)

Nysten, E. D. S., Huo, Y. H., Yu, H., Song, G. F., Rastelli, A., and Krenner, H. J. (2017). Multi-harmonic quantum dot optomechanics in fused LiNbO₃–(Al)GaAs hybrids. *Journal of Physics D: Applied Physics*, 50(43), 43LT01. <https://doi.org/10.1088/1361-6463/aa861a>

———. (2018). SAWtrain Research Highlight 1: “Multi-harmonic quantum dot optomechanics in fused LiNbO₃–(Al)GaAs hybrids.” [https://www.sawtrain.eu/research-highlights/SAWtrain-Research-Highlight-1-Multi-harmonic-quantum-dot-optomechanics-in-fused-LiNbO₃–AlGaAs-hybrids-Nysten.pdf](https://www.sawtrain.eu/research-highlights/SAWtrain-Research-Highlight-1-Multi-harmonic-quantum-dot-optomechanics-in-fused-LiNbO3-AlGaAs-hybrids-Nysten.pdf)

Romero, M. F., Bosca A., Pedros J., Martinez J., **Fandan R.**, Palacios T., and Calle F. “Impact of 2D-Graphene on SiN Passivated AlGaIn/GaN MIS-HEMTs Under Mist Exposure”. In: *IEEE Electron Device Letters* 38 (2017). <https://doi.org/10.1109/LED.2017.2747500>

Villa, B., Bennett, A. J., Ellis, D. J. P., Lee, J. P., Skiba-Szymanska, J., Mitchell, T. A., and Shields, A. J. (2017). Surface acoustic wave modulation of a coherently driven quantum dot in a pillar microcavity. *Applied Physics Letters*, 111(1). <https://doi.org/10.1063/1.4990966>

———. (2018) SAWtrain Research Highlight 5: “Surface acoustic wave modulation of a coherently driven quantum dot in a pillar microcavity” <https://www.sawtrain.eu/wp-content/uploads/2018/07/SAWtrain-Research-Highlight-5-Surface-acoustic-wave-modulation-of-a-coherently-driven-quantum-dot-in-a-pillar-microcavity.pdf>



Book Chapters

Caliendo, Cinzia, and **Hamidullah, Muhammad**. 2016. “Advances in Sensors: Reviews.” In *Advances in Sensors: Reviews*, ed. Sergey Y Yurish. International Frequency Sensor Association (IFSA) Publishing, S. L., 121.
http://www.sensorsportal.com/HTML/BOOKSTORE/Advance_in_Sensors_Vol_4.htm

Conference/Workshop Contributions

Andersson, Gustav “Non-exponential decay of a giant artificial atom”. In: Spice workshop: Quantum Acoustics meet Surface Acoustic Waves meets Solid State Qubits (Mainz, Germany, May 17-20, 2016). url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Andersson_SpiceWS_16.pdf.

Andersson, Gustav, Suri, B ., Guo, L., Aref, T., Ekström, M.K., Ask, A., Johansson, G., and Delsing, P.,. “Quantum acoustics with qubits: the SAW giant atom”. In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/ANDERSSON_SAWtrainSuS_17.pdf.

Biermann, K, **Helgers, P. L. J.**, Kuznetsov, A. S., Santos, P. V. and Tahraoui, A. “Confined exciton-polaritons in a laterally structured (Al,Ga)As microcavity”. In: 19th European Workshop on Molecular Beam Epitaxy (Korobitsyno, Russia, 19.-22.03.2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Biermann_EUROMBE_17.pdf.

———. (2017) “Exciton-polaritons in a laterally structured GaAs(001) based microcavity”. In: 19th European Workshop on Molecular Beam Epitaxy (Korobitsyno, Russia, 19.-22.03.2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Biermann_CSW2017.pdf.

Bilobran, A. L. O., de Lima M. M. and Santos P. V. “High-Q one- and two-dimensional phononic cavities”. In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/BILOBRAN_SAWtrainSuS_17.pdf.

Boscá, Alberto, Pedrós, Jorge, Ladrón de Guevara, Antonio, **Fandan, Rajveer**, Martínez-Rodrigo, Javier and Calle, Fernando. “Optical quantification of strain and doping in



graphene". In: Workshop: Understanding Materials Structure and Performance by Raman Confocal Microscopy (Madrid, Spain, April 26-28, 2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Bosca_Workshop_Raman_Confocal_Microscopy_16.pdf.

Bühler, Dominik D, Crespo-Poveda, A., Cantarero, A., and de Lima M. M. "Advanced acoustically tuned optical modulators for integrated photonics". In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Buehler_SAWtrainSuS_17.pdf.

Edlbauer, H, Takada, S., Bautze, T., Roussely, G., Zahn, H., Wieck, A. D., Meunier, T., and Bäuerle, C. "Transfer on demand towards SAW-driven single shot quantum optics experiments at the single electron level". In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/EDLBAUER_SAWtrainSuS_17.pdf.

Fandan, R, Pedrós, J., Schiefele, J., Boscá, A., Ladrón de Guevara, A., Sinusía, M., Fuentes, G., Martínez, J., and Calle, F. "Acoustically-driven surface phonon-plasmon polaritons in graphene/h-BN/AlN heterostructures". In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/FANDAN_SAWtrainSuS_17.pdf.

Fandan, R, Pedrós, J., Schiefele, J., Boscá, A., Martínez J., Calle F., "Light-Matter Interaction in Graphene/h-BN and Graphene/h-BN/Graphene Heterostructures Mediated by Surface Acoustic Waves". In: 8th Graphene and 2D Materials International Conference and Exhibition 2018 (Dresden, Germany, June 26-29, 2018).

Fandan, Rajveer, Pedrós, Jorge Schiefele, Jürgen Boscá, Alberto Martínez, Javier and Calle, Fernando, "Acoustically-driven surface and hyperbolic plasmon-phonon polaritons in graphene/h-BN heterostructures on piezoelectric substrates". In: Graphene Week 2018 (San Sebastian, Spain, September 10-14, 2018). url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Fandan_Graphene_Week_San%20Sebastian_2018.pdf

Hamidullah, Muhammad and Caliendo, Cinzia. "Higher order quasi-longitudinal lamb wave for liquid sensing application". In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: <https://kohlenstoff.physik.uni->



augzburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Hamidullah_SAWtrainSuS_17.pdf.

- Helgers, Paul L. J.**, Biermann, Klaus, Sanada, Haruki, Kunihashi, Yoji and Santos, Paulo V. “Acoustically driven single-photon sources”. In: 8th International school and symposium on nanoscale transport and photonics, Atsugi, Japan; Nov 13 - 17 2017.
- . (2018) “Acoustic charge and electron-spin transport in GaAs quantum wires”. In: Spring Meeting of the German Physical Society (DPG), Berlin, Germany; March 11 - 16 2018.
- . (2018) “Acoustic charge and electron-spin transport in GaAs quantum wires”. In: 1st International Symposium on Single Photon based Quantum Technologies; Berlin, Germany, May 30 - June 1 2018.
- . (2018) “Acoustic charge and electron-spin transport in GaAs quantum wires”. In: 34th International conference on the physics of semiconductors; Montpellier, France, July 29 - August 3 2018.
- . (2018) “Long-range acoustic carrier transport in quantum wires on GaAs (001)”. In: International Workshop on Sound-enabled Nanotechnologies; Valencia, Spain, November 26 - 29 2018.
- Helgers, Paul L. J.**, Biermann, Klaus and Santos, Paulo V. “Acoustic modulated single-photon sources”. In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Helgers_SAWtrainSuS_17.pdf.
- Kuznetsov, A., **Helgers, P.**, Biermann, K. and Santos, P. V. “Confined exciton-polaritons in structured (Al,Ga)As micro-cavities”. In: German-Japanese meeting on the science of hybrid quantum systems (Berlin, Nov. 10-11 2016). 2016.
- . (2017) “Optical confinement and conversion of exciton polaritons in a structured (Al,Ga)As microcavity”. In: Spring Meeting of the German Physical Society (DPG) (Dresden, Germany, Mar. 19-24, 2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Kuznetsov_DPG_17.pdf.
- . (2018) “Confined microcavity polaritons: effect of trap geometry on potential shape”. In: Spring Meeting of the German Physical Society (DPG), Berlin, Germany; March 11 - 16 2018.
- Lepage, H. V.**, Ford, C. J. B. and Barnes, C. H. W. “GPU-accelerated simulations of SAW-driven single electron transport”. In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Lepage_SAWtrainSuS_17.pdf.



[augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/LePage_SAWtrainSuS_17.pdf](https://www.kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/LePage_SAWtrainSuS_17.pdf).

Liou, Yi-Ting. “Anisotropic Conductivity in Graphene induced by Surface Acoustic Waves”. In: Spice workshop: Quantum Acoustics meet Surface Acoustic Waves meets Solid State Qubits (Mainz, Germany, May 17-20, 2016). 2017. url: https://www.kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Liou_SpiceWS_16.pdf.

Liou, Yi-Ting, Hernández-Mínguez, Alberto, Herfort, Jens, Marcelo Lopes, Joao, Tahraoui, Abbes and Santos, Paulo V. “Acoustoelectric transport in ZnO/MgO- covered graphene on silicon carbide”. In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: https://www.kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/LIOU_SAWtrainSuS_17.pdf.

Liou, Yi-Ting, Hernández-Mínguez, Alberto, Marcelo Lopes, Joao, Tahraoui, Abbes and Santos, Paulo V. “Modulation of Graphene Electronic Properties by High- frequency Surface Acoustic Waves”. In: 4th SPP 1459 Graphene Workshop (Chemnitz, Germany, Sep. 25-29, 2016). 2016. url: https://www.kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/LIOU_SPP_1459_17.pdf.

Nysten, E. D. S. and Krenner, H. “Towards strong sound-matter interactions in hybrid quantum dot-surface acoustic wave resonators”. In: NIM Winterschool (Kirchberg, Austria, March 13-18, 2016). 2016. url: https://www.kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Nysten_NIM_Winterschool_16.

———. “Towards strong sound-matter interactions in hybrid quantum dot-surface acoustic wave resonators”. In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: https://www.kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/NYSTEN_SAWtrainSuS_17.pdf.

Nysten, Emeline. “Towards strong sound-matter interactions in hybrid quantum dot-surface acoustic wave resonator”. In: Spice workshop: Quantum Acoustics meet Surface Acoustic Waves meets Solid State Qubits (Mainz, Germany, May 17-20, 2016). 2017. url: https://www.kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Nysten_SpiceWS_16.pdf.

Rubino, A, Hsiao, T. K., Chung, Y., Nasir, A., Hou, H., Son, S. K., Griffiths, J. P., Farrer, I., Ritchie, D. A., and Ford C. J. B. “Development of a SAWdriven source of polarised single photons”. In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url:



https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/RUBINO_SAWtrainSuS_17.pdf.

Ukropec, R, Vratzov, B., Santos, P. V. and van der Wiel, W. G. “Ultrahigh-Frequency Silicon Acousto-Electronics”. In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/UKROPEC_SAWtrainSuS_17.pdf.

Ukropec, Robert “High-frequency surface acoustic waves in silicon using nano- imprinting lithography”. In: Spice workshop: Quantum Acoustics meet Surface Acoustic Waves meets Solid State Qubits (Mainz, Germany, May 17-20, 2016). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Ukropec_SpiceWS_16.pdf.

Uzun, Y. “Ultrahigh-Frequency Acousto-Electronics - Poster presentation”. In: FOM Physics Meeting 2017 (Veldhoven, The Netherlands, Jan. 17-18 2017). 2017.

Villa, B, Bennett, A. J., Ellis, D. J. P., Lee, J. P., Skiba-Szymanska, J., Mitchell, T. A., Griffiths, J., Farrer, I., Ritchie, D. A., Ford, C. J. B. and Shields, A. J. “Surface acoustic wave modulated single-photon generation from a quantum dot”. In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Villa_SAWtrainSuS_17.pdf.

Villa, B. “Surface acoustic wave modulated single photon source”. In: Spice workshop: Quantum Acoustics meet Surface Acoustic Waves meets Solid State Qubits (Mainz, Germany, May 17-20, 2016). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Villa_SpiceWS_16.pdf.

Wang, Sixuan, Herrmann, Rudolf, Wixforth, Achim and Westerhausen, Christoph. “SAW-assisted water splitting”. In: SAWtrain Summer School: Physics and applications of GHz vibrations in semiconductors (Cargèse, France, Jul. 11-21, 2017). 2017. url: https://kohlenstoff.physik.uni-augsburg.de/owncloud/remote.php/webdav/2_communication/publications/publications/Wang_SAWtrainSuS_17.pdf.

