MICHAEL RENZLER

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SCIENTIFIC EDUCATION

University of Innsbruck July 2013 - September 2016
PhD in Physics
Thesis: Electron interactions with (doped) Helium Nanodroplets

University of Linköping (Sweden) July 2011 - June 2012
Studies of Material Physics and Nanotechnology
Erasmus stay abroad

University of Innsbruck November 2010 - June 2013
Studies of Physics (MSc.)
Focus: Experimental Ion Physics

University of Innsbruck November 2010 - September 2013
Studies of Physics (BSc.)

PROFESSIONAL EXPERIENCE

University of Innsbruck May 2020 - present
Senior Scientist
Department of Mechatronics

University of Innsbruck October 2016 - May 2020
PostDoc
Department of Mechatronics

University of Innsbruck July 2013 - September 2016
Research Assistant
Department of Ion Physics and Applied Physics

TEACHING

Various Lectures/Excercises/Lab Courses

Digital Technology	2016 - present
Electromagnetic Compatibility	2017 - present
Semiconductor Physics	2018 - present
Physical Fundamentals of Semiconductor Devices	2017 - present
Internet of Things	2017 - 2019

University Course

Internet of Things	2020

Co-Supervision of Master Theses

David Stock	2014
Martin Kuhn	2015
Erik Barwa	2016
Alexander Ritsch	2017

Co-Supervision of Bachelor Theses

Florian Prieth	2017
Dominic Ecker	2018
Tobias Faller	2018
Markus Gadner	2018

RESEARCH

H-Index	10
Number of peer-reviewed publications	24
Interests	Antenna Design, Nanotechnology, Electromagnetic Compatibility

For full list of metrics: Research ID

FUNDING (AS OF JUNE 2021)

EMC and Antenna Measurements ongoing
various companies
5.500 €

University of Innsbruck 2020
Infrastructure Funding: AntEMC
75.000 €

Leuchtturmprojekt Digialisierung 2020 - 2023
EMV Safe Tirol
165.000 €

Contract Research 2018 - 2019
Software Development: Texible GmbH
4.500 €

FFG Innovation Check (F&S BONDTEC Semiconductor GmbH) 2018 - 2019
Wireless Connection of a Bond Head
12.500 €

PUBLICATIONS

References

[1] V. Ruzsanyi, H. Wiesenhofer, C. Ager, J. Herbig, G. Aumayr, M. Fischer, M. Renzler, T. Ussmueller, K. Lindner, and C. Mayhew. "A portable sensor system for the detection of human volatile compounds against transnational crime". In: *Sensors and Actuators B: Chemical* 328 (Feb. 2021), p. 129036. DOI: 10.1016/j.snb.2020.129036.

[2] D. Mair, M. Renzler, A. Pfeifhofer, and T. Ußmüller. "Evolutionary Optimization of Asymmetrical Pixelated Antennas Employing Shifted Cross Shaped Elements for UHF RFID". In: *Electronics* 9.11 (Nov. 2020), p. 1856. DOI: 10.3390/electronics9111856.

[3] D. Mair, M. Ferdik, C. Happ, M. Renzler, and T. Ussmueller. "Numerical Optimization of a Fully Cross-Coupled Rectifier Circuit for Wireless Passive Ultra Low Power Sensor Nodes". In: *Sensors* 19.20 (Oct. 2019), p. 4527. DOI: 10.3390/s19204527.

[4] M. Fischer, M. Ferdik, L.-O. Rack, G. Saxl, M. Renzler, and T. Ussmueller. "An Experimental Study on the Feasibility of a Frequency Diverse UHF RFID System". In: *IEEE Access* 7 (2019), pp. 132311–132323. DOI: 10.1109/access.2019.2939613.

[5] M. Fischer, M. Renzler, and T. Ussmueller. "Development of a Smart Bed Insert for Detection of Incontinence and Occupation in Elder Care". In: *IEEE Access* 7 (2019), pp. 118498–118508. DOI: 10.1109/access.2019.2931041.

[6] M. Mahmoodi-Darian, S. Raggl, M. Renzler, M. Goulart, S. E. Huber, A. Mauracher, P. Scheier, and O. Echt. "Doubly charged coronene clusters - Much smaller than previously observed". In: *The Journal of Chemical Physics* 148.17 (May 2018), p. 174303. DOI: 10.1063/1.5028393.

[7] A. Kaiser, J. Postler, M. Ončák, M. Kuhn, M. Renzler, S. Spieler, M. Simpson, M. Gatchell, M. K. Beyer, R. Wester, F. A. Gianturco, P. Scheier, F. Calvo, and E. Yurtsever. "Isomeric Broadening of $C60^+$ Electronic Excitation in Helium Droplets: Experiments Meet Theory". In: *The Journal of Physical Chemistry Letters* 9.6 (Feb. 2018), pp. 1237–1242. DOI: 10.1021/acs.jpclett.8b00150.

[8] M. Renzler, N. Reithmaier, R. Reinhardt, W. Pohl, and T. Ußmüller. "A road tunnel model for the systematic study of lighting situations". In: *Tunnelling and Underground Space Technology* 72 (Feb. 2018), pp. 114–119. DOI: 10.1016/j.tust.2017.11.017.

[9] M. Renzler, L. Kranabetter, E. Barwa, L. Grubwieser, P. Scheier, and A. M. Ellis. "Resonant electron attachment to mixed hydrogen/oxygen and deuterium/oxygen clusters". In: *The Journal of Chemical Physics* 147.19 (Nov. 2017), p. 194301. DOI: 10.1063/1.5003428.

[10] M. Renzler, L. Kranabetter, M. Goulart, P. Scheier, and O. Echt. "Positively and Negatively Charged Cesium and $(C60_m)Cs_n$ Cluster Ions". In: *The Journal of Physical Chemistry C* 121.20 (Jan. 2017), pp. 10817–10823. DOI: 10.1021/acs.jpcc.6b11928.

[11] L. Kranabetter, M. Goulart, A. Aleem, T. Kurzthaler, M. Kuhn, E. Barwa, M. Renzler, L. Grubwieser, M. Schwärzler, A. Kaiser, P. Scheier, and O. Echt. "Cs^+ Solvated in Hydrogen - Evidence for Several Distinct Solvation Shells". In: *The Journal of Physical Chemistry C* 121.20 (Mar. 2017), pp. 10887–10892. DOI: 10.1021/acs.jpcc.6b12057.

[12] M. Renzler, M. Kuhn, A. Mauracher, A. Lindinger, P. Scheier, and A. M. Ellis. "Anionic Hydrogen Cluster Ions as a New Form of Condensed Hydrogen". In: *Physical Review Letters* 117.27 (Dec. 2016). DOI: 10.1103/physrevlett.117.273001.

[13] M. Renzler, M. Daxner, L. Kranabetter, A. Kaiser, A. W. Hauser, W. E. Ernst, A. Lindinger, R. Zillich, P. Scheier, and A. M. Ellis. "Communication: Dopant-induced solvation of alkalis in liquid helium nanodroplets". In: *The Journal of Chemical Physics* 145.18 (Nov. 2016), p. 181101. DOI: 10.1063/1.4967405.

[14] M. Kuhn, M. Renzler, J. Postler, S. Ralser, S. Spieler, M. Simpson, H. Linnartz, A. G. G. M. Tielens, J. Cami, A. Mauracher, Y. Wang, M. Alcamí, F. Martín, M. K. Beyer, R. Wester, A. Lindinger, and P. Scheier. "Atomically resolved phase transition of fullerene cations solvated in helium droplets". In: *Nature Communications* 7.1 (Nov. 2016). DOI: 10.1038/ncomms13550.

[15] M. Renzler, S. Ralser, L. Kranabetter, E. Barwa, P. Scheier, and A. M. Ellis. "Observation of stable $HO4^+$ and $DO4^+$ ions from ion - molecule reactions in helium nanodroplets". In: *Physical Chemistry Chemical Physics* 18.19 (2016), pp. 13169–13172. DOI: 10.1039/c6cp01895e.

[16] S. A. Krasnokutski, M. Kuhn, A. Kaiser, A. Mauracher, M. Renzler, D. K. Bohme, and P. Scheier. "Building Carbon Bridges on and between Fullerenes in Helium Nanodroplets". In: *The Journal of Physical Chemistry Letters* 7.8 (Apr. 2016), pp. 1440–1445. DOI: 10.1021/acs.jpclett.6b00462.

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[22] A. Mauracher, M. Daxner, S. E. Huber, J. Postler, M. Renzler, S. Denifl, P. Scheier, and A. M. Ellis. "The interaction of He^- with fullerenes". In: *The Journal of Chemical Physics* 142.10 (Mar. 2015), p. 104306. DOI: 10.1063/1.4913956.

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PATENTS

Size Selected Clusters And Nanoparticles 2020
EP 3 739 612 A1

Pending