

PERSONAL INFORMATION

Ulf Orrenius



Enterprise	University	EPR
<input checked="" type="checkbox"/> Management Level	<input type="checkbox"/> Full professor	<input type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
<input type="checkbox"/> Mid-Management Level	<input checked="" type="checkbox"/> Associate Professor	<input type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

2019-

CEO

Akustikdoktom Sweden AB

- Expert support in acoustics and vibration for industries, municipals, and building companies.
- Leading the R&D activities in acoustics. Leader of [APIS project](#) at CSA, KTH 2023-2024
- Development of and lecturing in technical development courses for professionals.
- Successfully negotiating business deals and legal contracts with customers and suppliers.
- Business budgeting, reporting and follow up.

Business or sector: Service provider, SME

2016-2021

CEO

ENSY AB

- Leading the business and R&D activities, 3-7 employees.
- Process development work for pilot plant industrialization.
- Successfully negotiating business deals and legal contracts with customers and suppliers.
- Business budgeting, reporting and follow up.
- Financial planning and funding management: Private equity, Energimyndigheten, Klimatklivet, Vinnova, Almi, Stiftelsen för Lantbruksforskning.
- Personnel: hiring, salaries, personal development plans etc.
- Environmental assessments (MKB etc) regarding ENSYs and customers operations.
- Patent management.

Business or sector: Environmental engineering, SME

1998-2016

Senior Expert, Manager

Bombardier Transportation Sweden AB

**Center of Competence, Acoustics and Vibration, Manager (2012-2013; 2016)**

Responsibilities as CoC manager included:

- Management of personnel.
- Global responsibility for the acoustic performance of new rail vehicles.
- Responsible for Processes and Tools.
- Organization of monthly coordination meeting with BT acousticians worldwide.

**Vehicle acoustics and noise control, Acoustic and Vibrations Specialist (1998-2016)**

Responsibilities as Senior Expert included:

- Acoustic planning, design, and management within rail vehicle development projects.
- Technical support on noise control in vehicle design projects, acoustic predictions (SEA, FE, CAA, Raytracing), troubleshooting and providing design advice.
- Develop and promote novel noise control solutions for vehicles and sub-systems.
- Initiate and lead R&D projects in the field of acoustics (e.g., WP and Technical leader in EU projects).
- Develop and lead in-house training courses.
- Develop and maintain acoustic prediction software
- Supervise student projects.
- Represent BT in external committees and steering groups (e.g. Vinnova ECO<sup>2</sup> centre at KTH and EC Project Acoutrain, Management Team).

Business or sector: Railway industry

1997-1998

Industrial Projects Manager  
Marcus Wallenberg Laboratory, KTH

Activities performed:

- Teaching in undergraduate courses.
- Laboratory measurements.
- Responsible for industrial projects, providing research services to external companies.

Business or sector: University

1990-1997

Research engineer, PhD student  
Marcus Wallenberg Laboratory, KTH

Business or sector: University

1988-1990

Test engineer  
Alfa-Laval Separation AB  
Responsible for field and laboratory testing.

Business or sector: Process industry

## EDUCATION AND TRAINING

1994-1995	ISVR, University of Southampton Research training, Marie Curie scholarship
1991-1997	KTH, Stockholm, Sweden Dr. Tech., Thesis title: Transmission of Structure-Borne Sound in Ships.
1983-1988	KTH, Stockholm, Sweden Master of Science, Aeronautical engineering
1994-1995	ISVR, University of Southampton Research training, Marie Curie scholarship
1982-1983	Military training, Swedish coast artillery
1978-1982	Secondary school, Södertälje, Sweden; High school diploma, Marblehead, USA 1980

## COURSES AND QUALIFICATIONS

### *Leadership, project management*

○ Mentorship training, Take a Change, Stockholm.	2019-2020
○ Leading Innovation, Stockholm School of Economics	2019
○ Project management and leadership	2015
○ Personal Interviews for BT leadership programme	2012
○ Research supervision, 4 academic credits, KTH	2010
○ Bombardier R&D Management Training, Berlin	2005
○ Integrated product development, Adranz Sweden.	1999

### *Acoustics and vibration*

○ Optimization with Matlab, MathWorks	2015
○ Modelling of Porous Materials, KTH	2012
○ Materials and Actuators, InMAR Short Course,	2005
○ Muffler Modeling Workshop, AVL-KTH,	2004
○ FSD3313 Rail Vehicle Dynamics, KTH 7.5 credits	2002
○ Structural Intensity, CETIM	1993
○ Boundary Elements in Acoustics, 3K Akustikbyrån AB	1992

- o Advanced concepts of noise and vibration, Stockholm 1991
- o Noise control in Ships, CETENA, Geonva 1991

*Business and economics etc*

- o Business Administration, Stockholm University (SU), 30 credits 2015
- o Micro- and Macroeconomics, SU, 38 credits 2013-2015
- o Italian language, SU, 50 credits 2015-2020

**PERSONAL SKILLS**

Digital skills

*Office:* Word, Excel, PowerPoint; *Business:* MS Project, Primavera, Doors; *Programming:* Matlab, Python, Fortran, Pascal; *Simulation tools:* Odeon, Nastran/Patran, Hypermesh, ANSYS, VA1, Wave6, Insul.

Mother tongue  
Other languages

Swedish  
English: Full professional proficiency  
German: Professional proficiency  
Italian: Fluent, limited professional proficiency

**ADDITIONAL INFORMATION**

**TEACHING EXPERIENCE**

*Academic:*

- o Technical Acoustics UNIGE: Lecturer, 2022, 2023
- o Energy methods SD2170: Lecturer, KTH 2018-2021
- o Guest lecturer in several KTH courses (acoustics and bio-mechanics), 2001-2018.
- o Perspectives on Vehicle Engineering: Lecturer and coordinator, KTH 1997-1998
- o Experimental structural dynamics : Course assistant KTH 1990-1994
- o Fundamentals of noise and vibration control: Assistant Lecturer, KTH 1997-1998
- o Experimental structural dynamics, guest lecturer, Tallinn Technical University, 1997.
- o Strength of Mechanics : Course assistant, KTH 1988

*Industrial:*

- o Lecturer: Introduction to acoustics and industrial noise control, Professional Development Course 2019-2024; Arvika, Stockholm, Åmotfors, Malung
- o Lecturer: Coupled FE-SEA modelling, Professional Development Course & Industrial Workshop, Oxford and Krakow 2011.
- o Responsible for Bombardier Transportation in-house training program on Acoustics and Vibration 2002-2005: Leading and organizing courses on acoustics and vibration in Sweden, Germany, Mexico and USA, 2002-2007.
- o Modelling of sound and vibration transmission using SEA/FEM/BEM, Short Course, Lecturer and organizer, Berlin 2005.

**STUDENT SUPERVISION**

*PhD assessment board:*

- o Jia Sun, KTH, 2012
- o Bilong Liu, KTH, 2006
- o Mattias Sjöberg, KTH, 2002
- o Per Wennhage, KTH, 2001
- o Pelle Carlborn, KTH, 2000

*Examiner of licentiate thesis*

- o Yubao Song, KTH 2014
- o Jia Sun, KTH, 2010

*Examiner of MSc thesis*

- o Andreas Richard Kramer, DTU 2023

Moreover Dr. Orrenius has supervised a total of 16 MSc and 3 PhD student projects in acoustics and fluid dynamics.

**PATENTS (details on request)**

- o Self-adjustable fan blades for traction motors, 2009, TP01837

- Optimal design of wiper for high-speed trains, 2010, TP 02068
- Rail vehicle having a sound-insulated and vibration-insulated room-within-a-room cab WO 2013050069 A1, 2011, PCT/EP2011/067365
- Shielding of traction motor noise (uppfinningsanmälan), 2014

**PUBLICATIONS**

Thesis's, book chapters and journal articles (in reverse chronological order):

- [1] KUMAR, S., FENG, L., ORRENIUS, U., Sound Transmission through Double Leaf Partitions: a Criterion for Quick Convergence using Space Harmonic Analysis, *Journal of Vibration and Acoustics* **138** (4), 2016.
- [2] FENG, L., ÅBOM, M. ORRENIUS, U., Engineering methods to predict noise levels at reference points with known source properties *Appl. Acoust.* (2015), pp. 68-74.
- [3] ORRENIUS, U. CARLSSON, U., Attractive train interiors: Minimizing annoying sounds and vibration, in *Notes on Numerical Fluid Mechanics and Multidisciplinary Design*, Volume **126**, 2015, pp 707-714, Springer Press 2015.
- [4] ORRENIUS, U. LIU, H., WAREING, A., FINNVEDEN, S., COTONI, V., Wave modelling in predictive acoustics: Application to rail-vehicles and aircraft, *J. of Wave motion*, **51** (2014), pp. 635-649.
- [5] ROSE, L. M., ORRENIUS, U. AND NEUMANN, W., Work environment and the bottom line - Survey of tools relating work environment to business results, *Human Fact. and Ergonomics in Manuf. & Service Ind.* **23** (5), pp. 368–381 (2013).
- [6] BARTOLOZZI, G. PIERINI, G., ORRENIUS, U., BALDANZINI, N., An equivalent material formulation for sinusoidal corrugated cores of structural sandwich panels *Composite Structures* **100** (2013) pp. 173–185.
- [7] KUMAR, S., FENG, L., ORRENIUS, U., Predicting the Sound Transmission Loss of Honeycomb Panels using the Wave Propagation Approach, *Acta Acustica united with Acustica*, Vol. **97** (2011), pp. 869-876.
- [8] ORRENIUS, U., Leth, S. and Frid, A. 2008, Noise Reduction at Urban Hot-Spots by Vehicle Noise Control, [Noise and Vibration Mitigation for Rail Transportation Systems, Notes on Numerical Fluid Mechanics and Multidisciplinary Design](#), Volume **99**, 2008, pp 419-425.
- [9] U. ORRENIUS 1994, Dept. of Vehicle Eng., KTH, Propagation of structure-borne sound in periodic plate-frame structures. (licentiate thesis)
- [10] U. ORRENIUS and S FINNVEDEN 1996, Calculation of wave propagation in rib-stiffened plate structures. *J. of Sound and Vibration*, Vol. **198**, p.203-224.
- [11] ORRENIUS, U., 1997, Dept. of Vehicle Eng. KTH, Stockholm, report TRITA-FKT 9715 Transmission of Structure-Borne Sound in Ships (doctoral thesis).
- [12] ORRENIUS, U. 1988, 3K Akustikbyrå AB, Report S87151.02, Measurement of dynamic stiffness parameters for vibration isolators. (M.Sc. Thesis).

In addition, Dr. Orrenius is the author/co-author of more than 40 conference papers. Details are available on request.