

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 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

Ulf Orrenius ( Dr.Tech.) has an unique hands-on experience of modelling and control of acoustic sources for aircraft and trains and associated transmission paths. He was 18 years at the Bombardier Transportation global centre of competence for acoustics and vibration where he served as a senior specialist and project manager. He has highly qualified experience from Bombardier Aerospace where he worked with modelling of aircraft noise and experimental source characterization methodology and associated abatement techniques. He had a key role in the development and commercialization of the Bombardier BRAINS acoustic prediction software for specialist users. He is also an experienced project leader with a long and successful track record of management positions in European and Swedish RnD projects.

**WORK EXPERIENCE**

2019-

CEO

Akustikdoktorn Sweden AB ○ Leading the business and R&D activities.

- Expert support in acoustics and vibration for industries, municipals, and construction companies.
- Successfully negotiating business deals and legal contracts with customers and suppliers.
- Business budgeting, reporting and follow up.
- Development of and giving development courses for professionals in industry.

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, Bombardier Aerospace Canada

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Ulf Orrenius

**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 ECO2 centre at KTH and EC Project Acoutrain, Management Team).

Business or sector: Railway industry, Aircraft 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

1988-1990

Business or sector: University

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

EDUCATION AND TRAINING  
1994-1995 Business or sector: Process industry

1991-1997 ISVR, University of Southampton  
Research training, Marie Curie scholarship

1983-1988 KTH, Stockholm, Sweden  
Dr. Tech., Thesis title: Transmission of Structure-Borne Sound in Ships.

1982-1983 KTH, Stockholm, Sweden

1978-1982 Master of Science, Aeronautical engineering

## PERSONAL SKILLS

Military training, Swedish coast artillery

Secondary school, Södertälje, Sweden; High school diploma, Marblehead, USA 1980

Mother tongue

*Swedish*

Other languages

*English: Full professional proficiency, German: Professional proficiency, Italian: Semi-fluent.*

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## 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.

### **STUDENT SUPERVISION**

*PhD assessment board:* ○

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

*Examiner of licentiate thesis*

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

Moreover, through 1998 to 2015 Dr. Orrenius supervised a total of 15 MSc and 3 PhD student projects in acoustics and fluid dynamics.

- **PATENTS (details on request)**
- 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

### **ADDITIONAL INFORMATION**

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