

Curriculum vitae with track record - 2022

Personal information

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| First name, Surname: | Rune, SCHLANBUSCH | | |
| Date of birth: | 19.03.1981 | Sex: | Male |
| Nationality: | Norwegian | | |
| Researcher unique identifier(s) (ORCID, ResearcherID, etc.): | 0000-0002-0730-845X | | |
| URL for personal website: | https://www.norceresearch.no/personer/rune-schlanbusch/629 | | |

Education

| Year | Faculty/department - University/institution - Country |
|------|---|
| 2012 | Ph.D. Engineering Cybernetics, NTNU, Norway |
| 2007 | Master, Space Technology, Narvik University College (now UiT), Norway |

Positions - current and previous

| Year | Job title – Employer - Country |
|-----------|--|
| 2019- | Deputy Research Director, Smart Instrumentation and Industrial Testing, NORCE Norwegian Research Centre, Norway |
| 2018-2021 | Chief Technology Officer, Machine Prognostics AS, Norway |
| 2013-2018 | Senior Researcher, Smart Instrumentation and Industrial Testing, NORCE Norwegian Research Centre (Former: Teknova), Norway |
| 2013-2017 | Associate Professor II, Space Technology, Narvik University College/UiT, Norway |
| 2011-2013 | Associate Professor and Program Coordinator, Space Technology, Department of Technology, Narvik University College (now UiT), Norway |

Project management experience

Selected projects

| Year | Project owner - Project - Role - Funder |
|-------|---|
| 2022- | University of Agder - PHMHydro Performance & Health Management for Hydroelectric Powerplants – WP leader – IKTPLUSS NFR |
| 2021- | NORCE Norwegian Research Centre – Utvikling av en digitalisert testmetode for ryggsekker – Project manager – RFF Agder |
| 2020- | University of Agder - Analytics for asset Integrity Management of Windfarms – WP leader – IKTPLUSS NFR |

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| 2015-Present | University of Agder - Centre for Research-based Innovation (SFI) Offshore Mechatronics – WP leader – SFI NFR <ul style="list-style-type: none"> - Task leader, Condition monitoring of large steel wire ropes, develop sensors, models and algorithms for real-time assessment of steel wire ropes for offshore applications - Task leader, Acoustic emission testing of hydraulic cylinders, develop methods for multiple fault diagnosis and prognostics based on acoustic emission sensing. Post-doc supervision |
| 2014-2021 | CoreAll – Modelling and design of resistivity sensor for measurement while coring system – Project manager – Industry funded |
| 2020-2021 | Machine Prognostics AS – Foresight Maritime – R&D manager – European Space Agency |
| 2018-2021 | Machine Prognostics AS – Automatic classing of marine vessels based on condition monitoring data – R&D manager - RFF Agder |
| 2017-2019 | Teknova – Next generation of vibration sensors for rotating machinery – R&D leader – FORNY NFR |
| 2016 | MHWirth AS – Road mapping of condition-based maintenance technical program – Project leader – Industry funded |
| 2015-2017 | Teknova – Competency building towards cost effective condition-based maintenance for the offshore industry – Task leader – Sørlandets kompetansefond |

Supervision of students

| Master's student | Ph.D. students | Post-docs | University/institution - Country |
|------------------|----------------|-----------|----------------------------------|
| 16 | 1 | 2 | UiA, UiT, NORCE, NTNU, Norway |

Other relevant professional experiences

| Year | Description - Role |
|-----------|--|
| 2022- | Management Committee Member of COST Action CA21104 Pan-European Network for Sustainable Hydropower |
| 2021- | IEA Wind Task 49 Integrated Design of Floating Wind Arrays coordinator at NORCE |
| 2021- | Is currently working on commercialization strategy for low-cost Acoustic Emission monitoring system for steel ropes and hydraulic cylinders |
| 2021- | Deputy board member of SFI Offshore Mechatronics |
| 2020-2022 | Responsible for the Norwegian Railway Directorate's membership of Europe's Rail Joint Undertaking within the Focus Area of Intelligent & Integrated asset management |
| 2019- | Board member of Aersea AS, Kristiansand, Norway |
| 2018-2019 | Assessment committee for employment, Faculty of Engineering, The Arctic University of Norway (UiT) |

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| 2018 | Opponent for Adam Leon Kleppe, PhD Defence, Department of Mechanical and Industrial Engineering, NTNU, Norway |
| 2017-2021 | FORNY2020 – Commercializing novel vibration monitoring system based on long term research collaboration with Dr. Erich Bechhoefer. Technical responsible in project. CTO in Machine Prognostics AS, the associated start-up company. |
| 2017, 2022 | Certified Vibration Analyst ISO Category II & III |
| 2017- | Leader of R&D technical group for the national Norwegian drone association, UAS Norway |
| 2017- | Organizing committee for about three yearly drone conferences, workshops and seminars related to various topics within innovation, inspection, energy, including the Unmanned Nordic Conference (UNC). Average attendance 100-250 |
| 2015- | Organizing committee or lead organizer in various regional and national conferences and workshops related to condition monitoring and digitalization. Average attendance 50-150 |
| 2015-2021 | Eric Bechhoefer – major international collaborator on research within development of diagnostics and prognostics system technology for condition monitoring, Green Power Monitoring Systems Inc., USA |
| 2014-2016 | Board member of TEKNA Aust-Agder, Norway |
| 2010- | Member of IEEE Control Systems Society and Robotics and Automation Society |
| 2010- | Reviewer of over 30 different international scientific journals including IEEE TAC, IEEE TCST, IEEE TIE, IEEE TNNLS, Automatica, Systems & Control Letters; Reviewer for over 20 different international conferences including ACC, CDC, IFAC etc. |
| 2010-2013 | Antonio Loría – major international collaborator on research within stability analysis, and hybrid and cascaded systems, National Centre of Scientific Research, France |
| 2010-2019 | Selected professional courses: EcoOnline, Offshore Drilling Course, PHM Fundamentals - From Monitoring/Sensing to Fault Diagnosis and Failure Prognosis, The Center for Professional Advancement “Pilot Plant and Scale-Up Studies” by Gary B. Tatterson, Series of COMSOL mini-courses, EECI Graduate School on Control “Controlled Synchronisation of Dynamical Systems” by Antonio Loría & Elena Panteley, EECI Graduate School on Control “Stabilization for nonlinear dynamical systems” by Laurent Praly. |
| 2007-2018 | Teaching at The Arctic University of Norway (UiT): <ul style="list-style-type: none"> - Spacecraft systems engineering, MSc, 10 ECTS (2012-2018) - Spacecraft mechanisms, MSc, 5 ECTS (2011-2013) - Basic communication, BSc, 5 ECTS (2011-2013) - Digital communication, BSc, 5 ECTS, (2007-2009) |

Track record

- Publication record includes 48 conference publications, 17 journal publications and one book chapter:
 - Schlanbusch, S., J. Zhou and R. Schlanbusch (2021). Adaptive Attitude Control of a Rigid Body with Input and Output Quantization. *IEEE Transactions on Industrial Electronics*.
 - Shanbhag, V. V., T. J. J. Meyer, L. W. Caspers and R. Schlanbusch (2021). Defining acoustic emission-based condition monitoring indicators for monitoring piston rod seal and bearing wear in hydraulic cylinders. *The International Journal of Advanced Manufacturing Technology*, vol. 115, pp. 2729–2746.
 - Shanbhag, V. V., T. J. J. Meyer, L. W. Caspers and R. Schlanbusch (2021). Failure Monitoring and Predictive Maintenance of Hydraulic Cylinder - A State of Art Review. *IEEE/ASME Transactions on Mechatronics*.
 - Shanbhag, V. V., T. J. J. Meyer, L. W. Caspers and R. Schlanbusch (2020). Condition monitoring of hydraulic cylinder seals using acoustic emissions. *The International Journal of Advanced Manufacturing Technology*, vol. 109, pp. 1727-1739.
 - Schlanbusch, R., E. Oland and E. Bechhoefer (2017). Condition Monitoring Technologies for Steel Wire Ropes – A Review. *International Journal of Prognostics and Health Management*, vol. 1, 14 pages.
 - Bechhoefer, E., R. Schlanbusch and T. I. Waag (2016). Techniques for Large, Slow Bearing Fault Detection. *International Journal of Prognostics and Health Management*, vol. 7, 11 pages.
 - Schlanbusch, R. and E. I. Grøtli (2015). Hybrid Certainty Equivalence Control of Rigid Bodies with Quaternion Measurements. *IEEE Transactions on Automatic Control*, vol. 60, no. 9, pp. 2512-2517, doi: 10.1109/TAC.2014.2382153.
 - Schlanbusch, R., A. Loría, and P. J. Nicklasson (2012). On the stability and stabilization of quaternion equilibria of rigid bodies. *Automatica*, vol. 48, no. 12, pp. 3135-3141.
 - Schlanbusch, R., A. Loría, R. Kristiansen, and P. J. Nicklasson (2012). PD+ Based Output Feedback Attitude Control of Rigid Bodies. *IEEE Transactions on Automatic Control*, vol. 57, no. 8, pp. 2146-2152, doi: 10.1109/TAC.2012.2183189.
 - Schlanbusch, R., R. Kristiansen, and P. J. Nicklasson (2011). Spacecraft formation reconfiguration with collision avoidance. *Automatica*, vol. 47, no. 7, pp. 1443-1449. doi:10.1016/j.automatica.2011.02.014.
- Selected invited presentations:
 - Acoustic Emission Monitoring. TU Delft, 2022.
 - Getting the Youth Excited: How Drones are Helping Eco-Agents Save Our Environment. Xponential, 2019, Chicago, IL.
 - Drones and autonomous systems shaping the future arctic observing system. Arctic Partnership Week 2018, Busan, South Korea.
 - Research and development on drones in Norway. Unmanned Nordic Conference 2016, Oslo, Norway.
 - Mathematical methods for prognostics. CBM Specialist Workshop 2015, Grimstad, Norway
- SFI Offshore Mechatronics' Innovation Award "Method and Apparatus for Detecting Wire Breaks in Ropes".