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## Research

Member of the ultrasound group at the department of Biomedical Engineering. Main areas are transducer characterisation, acoustophores and acoustic fields of dolphins.

## Employment

### Senior lecturer

Division for Biomedical Engineering  
Lund University  
Lund, Sweden  
2015 Sept 21 → present

### Office director

Vattenhallen Science Center  
Lund University  
Lund, Sweden  
2015 Sept 18 → present

### Profile area member

LTH Profile Area: Engineering Health  
Lund University  
Sweden  
2022 Jun 28 → present

## Research outputs

**Det råder inget motsatsförhållande mellan teknik och etik. De avhandlas bäst tillsammans**  
Runeson, P., Regnell, B., Almqvist, M. & Åström, K., 2019 Feb 5, Sydsvenskan.

### Outreach initiatives operated by universities for increasing interest in science and technology

Gumaelius, L., Almqvist, M., Arnadottir, A., Axelsson, A., Conejero, J. A., Garcia-Sabater, J. P., Klitgaard, L., Kozma, C., Maheut, J., Marin-Garcia, J., Mickos, H., Nilsson, P. O., Norén, A., Pinho-Lopes, M., Prenzel, M., Ray, J., Roxå, T. & Voss, M., 2016 Nov 1, In: European Journal of Engineering Education. 41, 6, p. 589-622 34 p.

**Bringing physics, synchrotron light and probing neutrons to the public: a collaborative outreach**

Micklavzina, S., Almqvist, M. & Ristinmaa Sörensen, S., 2014, In: Physics Education. 49, 2, p. 221-230

**Temperature and trapping characterization of an acoustic trap with miniaturized integrated transducers - towards in-trap temperature regulation**

Johansson, L., Evander, M., Lilliehorn, T., Almqvist, M., Nilsson, J., Laurell, T. & Johansson, S., 2013, In: Ultrasonics. 53, 5, p. 1020-1032

**Design and benchmark tests of a hydrophone array system for whale echolocation recordings**

Starkhammar, J., Amundin, M., Nilsson, J., Jansson, T., Almqvist, M. & Persson, H. W., 2012, In: Open Journal of Acoustics. 2, 3, p. 121-130

**Enclosure-Induced Interference Effects in a Miniaturized Sidescan Sonar**

Jonsson, J., Lekholm, V., Kratz, H., Almqvist, M. & Thornell, G., 2012, In: IEEE Journal of Oceanic Engineering. 37, 2, p. 236-243

**Separating overlapping click trains originating from multiple individuals in echolocation recordings.**

Starkhammar, J., Nilsson, J., Amundin, M., Kuczaj, S. A., Almqvist, M. & Persson, H. W., 2011, In: Journal of the Acoustical Society of America. 129, 1, p. 458-466

**Simulation, Manufacturing, and Evaluation of a Sonar for a Miniaturized Submersible Explorer**

Jonsson, J., Edqvist, E., Kratz, H., Almqvist, M. & Thornell, G., 2010, In: IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control. 57, 2, p. 490-495

**47-channel burst-mode recording hydrophone system enabling measurements of the dynamic echolocation behavior of free-swimming dolphins.**

Starkhammar, J., Amundin, M., Nilsson, J., Jansson, T., Kuczaj, S. A., Almqvist, M. & Persson, H. W., 2009, In: Journal of the Acoustical Society of America. 126, 3, p. 959-962

**An echolocation visualization and interface system for dolphin research**

Amundin, M., Starkhammar, J., Evander, M., Almqvist, M., Lindström, K. & Persson, H. W., 2008, In: Journal of the Acoustical Society of America. 123, 2, p. 1188-1194

**Kan man på programnivå vända negativa trender?**

Almqvist, M. & Larsson, B., 2008, 5:e Pedagogiska inspirationskonferensen. Lunds Tekniska Högskola

**The dynamics of the bottlenose dolphin sonar beam.**

Starkhammar, J., Kuczaj, S. A., Amundin, M., Nilsson, J., Almqvist, M. & Persson, H. W., 2008, In: Journal of the Acoustical Society of America. 124, 4, 2506.

**Acoustic Touch Screen for Dolphins, First application of ELVIS - an Echo-Location Visualization and Interface System**

Starkhammar, J., Amundin, M., Olsén, H., Almqvist, M., Lindström, K. & Persson, H. W., 2007 Jun, 4th International Conference on Bio-Acoustics 2007 . Curran Associates, Inc, p. 63-68 (Proceedings of the Institute of Acoustics ; vol. 29, no. part 3).

**Design and evaluation of a new tool for echolocation measurements**

Starkhammar, J., Amundin, M., Olsén, H., Dahl, S., Almqvist, M., Lindström, K. & Persson, H. W., 2007.

**Noninvasive acoustic cell trapping in a microfluidic perfusion system for online bioassays**

Evander, M., Johansson, L., Lilliehorn, T., Piskur, J., Lindvall, M., Johansson, S., Almqvist, M., Laurell, T. & Nilsson, J., 2007, In: Analytical Chemistry. 79, 7, p. 2984-2991

**Study of ATP-release from acoustically levitated erythrocytes**

Evander, M., Mileros, K., Höglberg, C., Erlinge, D., Almqvist, M., Laurell, T. & Nilsson, J., 2007, In: Nano2Life Autumn Meeting. 1, p. 24-24

**Study of ATP-release from acoustically levitated erythrocytes**

Evander, M., Mileros, K., Höglberg, C., Erlinge, D., Almqvist, M., Laurell, T. & Nilsson, J., 2007, *The proceedings of micro total analysis systems 2007*. Viovy, J.-L., Tabeling, P., Descroix, S. & Malaquin, L. (eds.). Chemical and Biological Microsystems Society, Vol. 2. p. 1372-1374 3 p.

**Acoustic Trapping: System Design, Optimization and Applications**

Evander, M., Johansson, L., Lilliehorn, T., Almqvist, M., Wallman, L., Johansson, S., Laurell, T. & Nilsson, J., 2006, *Proceedings of the sixth Micro Structure Workshop*. Vol. 1. p. 33-33 1 p.

**Acoustic trapping of cells in a microfluidic format**

Evander, M., Johansson, L., Lilliehorn, T., Lindvall, M., Piskur, J., Almqvist, M., Johansson, S., Laurell, T. & Nilsson, J., 2005, *Proceedings of µTAS 2005 Conference*. Jensen, K. F., Han, J., Harrison, D. J. & Voldman, J. (eds.). Transducer Research Foundation, Vol. 1. p. 515-517 3 p.

**Characterization of micromachined ultrasonic transducers using light diffraction tomography**

Almqvist, M., Törndahl, M., Nilsson, M. & Lilliehorn, T., 2005, In: IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control. 52, 12, p. 2298-2302

**Development of educational image databases and e-books for medical physics training**

Tabakov, S., Roberts, V. C., Jonsson, B.-A., Ljungberg, M., Lewis, C. A., Wirestam, R., Strand, S.-E., Lamm, I.-L., Milano, F., Simmons, A., Deane, C., Goss, D., Aitken, V., Noel, A., Giraud, J.-Y., Sherriff, S., Smith, P., Clarke, G., Almqvist, M. & Jansson, T. & 1 others, EMIT International Consortia, E. P., 2005, In: Medical Engineering & Physics. 27, 7, p. 591-598

**Dynamic arraying of microbeads for bioassays in microfluidic channels**

Lilliehorn, T., Evander, M., Simu, U., Johansson, S., Almqvist, M., Nilsson, J. & Laurell, T., 2005, In: Sensors and Actuators B: Chemical. 106, 2, p. 851-858

**European Medical Imaging Technology Training, EMIT – ett prisbelönt EU-utbildningsprojekt**

Almqvist, M., Jansson, T., Jönsson, B.-A., Lamm, I.-L., Ljungberg, M., Strand, S.-E. & Wirestam, R., 2005, [Host publication title missing]. Lunds Tekniska Högskola

**Temperature evaluation of soft and hard PZT transducers for ultrasonic**

Johansson, L., Evander, M., Lilliehorn, T., Almqvist, M., Nilsson, J., Laurell, T. & Johansson, S., 2005, *Proceedings of µTAS 2005 Conference*. Jensen, K. F., Han, J., Harrison, D. J. & Voldman, J. (eds.). Transducer Research Foundation, Vol. 2. p. 1428-1430 3 p.

**Trapping of microparticles in the near field of an ultrasonic transducer**

Lilliehorn, T., Simu, U., Evander, M., Almqvist, M., Stepinski, T., Laurell, T., Nilsson, J. & Johansson, S., 2005, In: Ultrasonics. 43, 5, p. 293-303

**Versatile microchip utilising ultrasonic manipulation of microparticles**

Nilsson, M., Lilliehorn, T., Johansson, L., Almqvist, M., Simu, U., Johansson, S., Laurell, T. & Nilsson, J., 2005, *Proceedings of the International Federation for Medical & Biomedical Engineering. 13th Nordic Baltic Conference on Biomedical Engineering and Medical Physics*. Int. Federation for Medical and Biological Eng, p. 123-124

**Versatile microchip utilising ultrasonic standing waves**

Evander, M., Lilliehorn, T., Johansson, L., Almqvist, M., Simu, U., Johansson, S., Laurell, T. & Nilsson, J., 2005, *IFMBE Proceedings 2005*. p. 123-124 2 p.

**Array transducer for ultrasonic manipulation of particles**

Lilliehorn, T., Johansson, L., Simu, U., Stepinski, T., Johansson, S., Evander, M., Almqvist, M., Laurell, T. & Nilsson, J., 2004, p. 69-72. 4 p.

### **Bioassays on ultrasonically trapped microbead clusters in microfluidic systems**

Lilliehorn, T., Evander, M., Simu, U., Almqvist, M., Johansson, S., Laurell, T. & Nilsson, J., 2004, *Micro Total Analysis Systems 2004*. Laurell, T., Nilsson, J., Jensen, K., Harrison, J. & Kutter, J. (eds.). Royal Society of Chemistry, Vol. 2. p. 327-329 3 p.

### **Ultrasonic bead trapping for bioassays**

Nilsson, M., Almqvist, M., Nilsson, J., Laurell, T., Lilliehorn, T., Simu, U. & Johansson, S., 2004, p. 149-151. 3 p.

### **Ultrasound field characterisation in air using light diffraction tomography**

Almqvist, M., Persson, H. W. & Lindström, K., 2004, *AMUM 2004: Advanced Metrology for Ultrasound in Medicine 2004*. IOP Publishing, Vol. 1. p. 150-154

### **Går kontinuerlig examination att kombinera med graderade betyg?**

Almqvist, M. & Andersson, R., 2003, p. 52-53.

### **The Pedagogical Academy - a Way to Encourage and Reward Scholarly Teaching**

Andersson, P., Olsson, T., Almqvist, M., Zetterqvist, L., Axelsson, A., Olsson, G. & Roxå, T., 2003, *Improving Student Learning: Theory and Practice-10 years on*. Rust, C. (ed.). The Oxford Centre for Staff and Learning Development, p. 307-314 8 p.

### **Ultrasonic trapping of microparticles**

Evander, M., Lilliehorn, T., Simu, U., Almqvist, M., Stepinski, T., Laurell, T., Nilsson, J. & Johansson, S., 2003, p. 28-29.

### **Characterisation and comparison of a cMUT versus a piezoelectric transducer for air applications**

Törndahl, M., Almqvist, M., Wallman, L., Persson, H. W. & Lindström, K., 2002, *2002 IEEE Ultrasonics Symposium. Proceedings (Cat. No.02CH37388)*. IEEE - Institute of Electrical and Electronics Engineers Inc., p. 1023-1026

### **Experimental verification of tomographic measurement methods in ultrasound**

Almqvist, M., 1999, Department of Electrical Measurements, Lund University. 172 p.

### **Ultrasound Doppler Vector Tomography - Measurements of Directional Blood Flow**

Jansson, T., Almqvist, M., Stråhlén, K., Eriksson, R., Sparr, G., Persson, H. W. & Lindström, K., 1997, In: *Ultrasound in Medicine and Biology*. 23, 1, p. 47-57

### **Ultrasound Doppler Measurements of Blood Flows using Tomographic Methods**

Stråhlén, K., Sparr, G., Almqvist, M. & Persson, H. W., 1996, *Proceedings*. p. 68-71

## **Activities**

### **LU Open Science Days 2024**

Holst, J. (Presenter), Gren, J. (Presenter) & Almqvist, M. (Presenter)  
2024 Nov 19

### **LU Open Science Days 2024**

Adamaki, A. (Chair), Dell'Unto, N. (Member of programme committee), Loubere, N. (Member of programme committee), Almqvist, M. (Member of programme committee), Hultqvist, S. (Member of programme committee), Nilsson, J. (Member of programme committee), Chertkovskaya, E. (Member of programme committee), Vihinen, M. (Member of programme committee), Lindh, K. (Organiser) & Olsson, A. (Organiser)  
2024

### **LU Open Science Days**

Dell'Unto, N. (Organiser), Loubere, N. (Organiser), Adamaki, A. (Organiser), Almqvist, M. (Organiser), Chertkovskaya, E. (Organiser), Vihinen, M. (Organiser), Runeson, P. (Organiser), Innes-Ker, Å. (Organiser), Mellgren, J. (Organiser), Olsson, A. (Organiser) & Lindh, K. (Organiser)

2023 Nov 20 → 2023 Nov 21

### **Hjärnshow**

Almqvist, M. (Role not specified)  
2015 → ...

### **Inspirationsföreläsning**

Almqvist, M. (Role not specified)  
2011 → 2023

### **Ljudshow**

Almqvist, M. (Lecturer)  
2010 → ...

### **Vad gör en ingenjör?**

Almqvist, M. (Role not specified)  
2006 → 2024

## **Prizes and Distinctions**

### **Åforsks Kunskapspris**

Almqvist, M. (Recipient), 2011

### **ETP (Excellent Teaching Practice), LTH**

Almqvist, M. (Recipient), 2003

### **Hans\_Uno Bengtsson-priset**

Almqvist, M. (Recipient), 2010

### **Leonardo da Vinci awards**

Almqvist, M. (Recipient), 2004

### **Lund universitets pedagogiska pris**

Almqvist, M. (Recipient), 2009