

Curriculum vitae for Bo Håkansson – update 2020-05-20

Date of birth: July 5, 1953
Place of birth: Vetlanda, Sweden
Home address: Splintvedsgatan 7, 416 80 Göteborg, Sweden
Telephone etc: +46 (0) 707853294 (mob), +46 (0) 31 772 1807 (office); boh@chalmers.se (Email)

Examinations:

Master of engineering: Chalmers University of Technology Göteborg, Sweden 1977 (Civ. ing.)
 Diploma thesis: *Utrustning för trådlös styrning av foderhiss*
Doctor of technology: Chalmers University of Technology Göteborg, Sweden 1984
 Thesis: *The Bone-Anchored Hearing Aid- Engineering aspects*
Associate professor: Department of Applied Electronics Chalmers 1990 (Docent)

Professional Positions:

Graduate student Department of Applied Electronics, Chalmers 1977-81
Forskarassistent Department of Applied Electronics, Chalmers 1982-85 and 1987-89
Högskolelektor CTH, 25-50% of full time 1990-2001
Consulting engineer Ingemansson Ingenjörbyrå, Göteborg 1986
 Nobelpharma, Göteborg, 50-75% of full time 1987-1996
Docenttjänst CTH Department of signals and systems 2001-2003
Biträdande Professor CTH Department of signals and systems 2003-2006
Professor CTH Department of signals and systems 2007-

Research supervision supervisor and examiner:

Doctor of technology: Peder Carlsson 1983-1990
 Anders Gingsjö 1991-1997
 Stefan Stenfelt 1992-1999
 Bill Hodgetts (International co-supervisor) 2003-2007
 Sabine Reinfeldt 2003- 2009
 Måns Eeg Olofsson (Informal co-supervisor) 2007-2012
 Hamidreza Taghavi – Implantable Baha 2009-2014
 Anna Gund - eHealth project (Co-supervisor) 2009-2011
 Max Ortiz – Robotic arm prosthesis 2010-2014
 Karl-Johan Fredén Jansson – MRI and implantable devices 2012- 2017
 Cristina Rigato – BCI 2014-2019
 Enzo Mastinu – Robotic arm project 2014-2019
 Alexander Thesleff –Robotic leg project 2016-
 Eva Lendaro – Phantom limp pain 2016-

Licentiate of engineering:

Anders Brandt Thesis 1989 1987-89
 Anders Gingsjö Thesis 1994 1992-1994
 Stefan Stenfelt Thesis 1996 1992-1996
 Sabine Reinfeldt Thesis 2006 2003-2006
 Hamidreza Taghavi Thesis 2012 2009-2012
 Karl-Johan Fredén Jansson Thesis 2015 2012-2015
 Enzo Mastinu Thesis 2017 2014-2017
 Cristina Rigato Thesis 2017 2014-2017
 Alexander Thesleff Thesis 2019 2016-2019
 Eva Lendaro Thesis 2020 2016-2020

Master of engineering: Approx 80 Master of engineering diploma thesises 1978-

My research areas - a brief summary 1977-2020

My research has led to twelve Ph.D. and ten Lic. Eng theses, and supported up to ten associate or full professor promotions. The scientific output comprises approximately 100 peer reviewed articles and 18 approved patent families and two patterns. Almost all the projects regarding bone conduction hearing devices have been highly interdisciplinary and developed in a close collaboration with other departments especially the Department of Ear, Nose and Throat and the Department of Audiology at Sahlgrenska hospital.

Another summary would be to list, in chronological order, the product systems that have reached practical or clinical use, where I have been inventor/co-inventor: Remote control of hoists (MSc thesis; Tännö Mekaniska, Värnamo), the bone-anchored hearing aid BAHA (PhD thesis; Cochlear Bone Anchored Solutions, Göteborg), Sound suppression device for rifles (Varberger Mekanik, Varberg), Communication systems (Oiido/3M/Ortofon), Audiometric transducer B-81 (Ortofon/ Interacoustics, Denmark), VEMP/ABR transducer B250 (Ortofon, Denmark), Robotic arm (Integrum, Sweden) and the Bone Conduction Implant (Oticon medical, Göteborg).

The most successful project so far has been the BAHA system, which was my PhD project defended in 1984. In the BAHA project I was responsible for the technical development of the external unit which includes, audio processor, bone conduction transducer and the mechanical coupling to the bone anchored titanium implant as well as some accessories most importantly the Skullsimulator. The Skullsimulator (Håkansson & Carlsson 1989) is today the golden standard for measuring the output of direct bone drive bone conduction devices. The surgical treatment procedures of the BAHA system were developed by Associate professor Anders Tjellström and the implant itself was based on the osseointegration principle of titanium implants discovered by Professor P-I Brånemark. It is estimated that more than 300.000 patients (2019) have been operated with this system around the world.

In a continuation of the BAHA project I started the bone conduction implant (BCI) project in 1998. In the BCI project the complete speaker is implanted under the intact skin and thus don't need a permanent skin penetration. The BCI system is more aesthetically appealing and is expected to have less skin issues than the BAHA system where the speaker is worn externally and attached via a skin penetrating implant to the skull bone. First BCI patient was operated by Associate professor Måns Eeg-Olofsson 2012 and After more than twenty years of research, the BCI system has proven to be safe and effective in clinical studies and is now (2020) in the regulatory process for commercialization.

A new patented transducer technology called Balanced Electro-magnetic Separation Transducer (BEST) was invented by (priority patent from 2000) and is today used in the BCI devices as well as in all BAHA models from Cochlear. This transducer technology has some unique properties as compared to previous technologies offering robust design, higher output force levels and lower distortion, especially at lower frequencies. Today, the BEST technology is also commercially used in the audiometric transducer B81 (Ortofon/ Interacoustics, Denmark) used in many audiology departments Worldwide.

In a project to investigate the hearing loss due to gun shots among the Swedish hunters led to my development of a new silencer named "Ijudriktare". This research also led to a change in the Swedish legislation (Jaktkungörelsen 1994:4) allowing some suppression in rifles and the Varberger Ear Guard (VEG) – a suppression device mounted on top of the hunting rifle which was a first design. It was not promotionally optimum that VEG appeared in the film Jägarna (1996) dealing with illegal hunting. Today there are numerous designs of silencers and they are a common accessory for hunting rifles in Sweden (unlimited suppression allowed from 2007, after license being approved) and preserving the hearing ability of the hunters.

I initiated a PhD project (Gingsjö et al. 1997) with the aim to develop digital signal processing algorithms to improve the sound comfort i.e. reduce transient sound in ordinary air conduction (*ac*) hearing aids. Most DSPs in hearing aids have today similar transient reduction algorithms implemented.

I have proposed and conducted a tinnitus project where a bone anchored sound stimulator for tinnitus relief was developed (Holgers & Håkansson 2001). The advantage using bone conduction for tinnitus masking is that ear canals can be open. With today's digital sound processors this can easily be implemented but tinnitus has a complex origin and long term effectiveness by use of masking is still unclear.

I initiated a master thesis project using GPS to follow orienteers in real time (Robertsson and Lundbäck, 2001). This project resulted in a first event in Sweden where the orienteers in the MSc exam event could be followed by spectators on a screen when they were running in the forest. This is today an increasing popular procedure used by TV media broadcasting orienteering competitions. As a frequent orienteer, especially at younger age (Swedish champion 1973 in night orienteering for age group up to 20 yrs) and part time payed orienteering map maker, visualizing the real time drama in the forest during an orienteering competition has, thanks to recent successful IT developments, been like a dream come thru.

I was one of the initiators of the Robotic arm project started as a MSc thesis by Max Ortiz Catalan in 2008. The Robotic arm project was initially aiming to control an arm prosthesis by implanted muscle and nerve electrodes. This project has over time grown tremendously thanks to a close collaboration between Chalmers, Gothenburg University and Integrum AB. Today this project comprises not only robotic arm control but also electric nerve stimulation for feedback, virtual reality for training to control missing limb, mind control of leg prosthesis, tactile stimuli and hearing through bone conduction for feedback, phantom limb pain reduction with augmented reality. This project grown tremendously under Associate professor Max Ortiz leadership and gained extraordinary scientific media attention, honorary prizes and extensive research grants.

In 2015 I initiated a new project regarding new transducer to support the diagnose of vestibular labyrinth disorders like dizziness and vertigo disorders. This transducer is called B250 and incorporates a BEST with low frequency emphasis which is used to evoke vestibular evoked myogenic potentials (VEMP). Results are very promising (Håkansson et al. 2018) and a commercialization is planned by Ortofon A/S during 2020.

Major research grants

Benföranckrad hörapparat (1982-85):	STU 82-3267, 83-3531, 84-4326 A+B
Reduktion av transienta störljud i hörapparat (1987-96):	NUTEK 87-04037, 89-01719-5
Människoskallens ljudtransmissionsegenskaper (1992-96):	TFR 92-721, 93-921, 95-411, 96-717
Inverkan av mellan- och inneröra på benlett ljud (2001-03),	TFR 2000-576
Hearing and communication in extreme environments (2003-05),	VR 621-2002-5624
The effect of the acoustic reflex on the hearing of one's own voice (2005)	Oticonfonden
Bestämning av egna röstens benledningskomponent (2008)	Stingerfonden
Own voice (2008)	HRF
Development of a bone conduction implant (2009-12)	Vinnova 2009-00190
Bone conduction implant - Animal study (2010)	HRF
Hearing implant without skin penetration (2012-2014)	VR 621-2012-5272
Clinical study – Bone Conduction Implant 2013	HRF
Clinical study – Bone Conduction Implant 2013	Promobilia
BCI Cristina – co applicant 2014-2017 -	VR 621-2013-6027
Robotic arm Enzo – Industri dokt 2014-2017 Integrum	VR 621-2013-5749
Implanterbara hörapparater 2015	Promobilia 15112
Yrselprojektet Medtech4Health	Vinnova 2016-2018
Robotic leg prosthesis NN - Industriadoktorand_2016-2019 Integrum –	SSF ID15-0089
Vestibular evoked myogenic potential 2017	HRF

Membership in Professional Societies:

Sveriges teknikers audiologiska förening (STAF)
 Svenska vibrationsföreningen (SVIB)
 Acoustical society of America (ASA)
 Biomaterials Group, Dept. of Handicap Research, University of Göteborg
 Biomaterialcentrum (BRC)

Awards and Honorary appointments:

For the pioneering work with the bone anchored hearing aid and prosthetic control:

First prize in <i>Innovation cup</i> by Dagens Industri och Skandia	1988
Certificate of commendation in <i>IEE Prize for Helping Disabled people</i>	1989
Honorary Membership of <i>British Facial and Audiological Implant Group</i>	1994
Tjellström Award, iRSM Edmonton Canada	2011
Erna Eberlings Award, Svenska läkaresällskapet	2011
Silverörat, Svenska audiologiska sällskapet	2012
Årets tekniker, Svenska handelskammaren	2013
Gustav Dahlen medaljen, Chalmers ingenjörsförening	2016
ISPO Blatchford Award, at 16th World Congress	2017
Otto Schmitt Award, at IFBME world congress in Pragh	2018
The Best Paper Award, Annals of Biomedical Engineering	2018
Honory doctor at Sahlgrenska Academy, Gothenburg University	2020

Other qualifications:**I was the faculty opponent PhD thesis and Half time/Lic eng evaluator:**

Johan Hellgren, "Compensation for hearing loss and cancellation of acoustic feedback in hearing aids", Department of Neuroscience and Locomotion, Division of technical Audiology, Linköpings Universitet, Linköping, Sweden (Mars 2000).

Wael Alien, Half time seminar, Sahlgrenska University hospital.

You Chang, Half time seminar, Jan 2016, Linköpings University.

I was a member of the evaluation committee for PhD thesis's presented by:

Lennart Magnusson, "Using the Speech Intelligibility Index for Evaluating Speech Test Results and Hearing Aid Characteristics", Audiologiska avdelningen, Göteborgs universitet (2000).

Jun Chen, "Signal Processing Approaches on Otoacoustic Emissions", Department of Neuroscience, Unit of Technical and Clinical Audiology, Karolinska Institutet, Stockholm (2000).

Harald Gustavsson, "Speech enhancement for Mobile Communications", Department of Telecommunications and Signal Processing, Blekinge Institute of Technology, Ronneby (2002).

William Hodgetts, Contributions to a Better Understanding of Fitting Procedures for Baha, University of Alberta, (2007).

Ulrike Richter, Spatial Characterization and Estimation of Intracardiac Propagation Patterns During Atrial Fibrillation, vol 27, ISSN: 1654-790X, Lund (2010).

I was expert evaluator in the appointments of:

Teknologie doktor Thomas Lunner, till Adjungerad Universitetslektor i Teknisk Audiologi, Institutionen för teknisk audiologi, Linköpings Universitetssjukhus (2000).

Adjunkt Samir Y. Yousif Al-Mulla till lektor i ämnet Elektronik vid Högskolan i Borås (1999).

Biträdande lektor Fernando Seoane i medicinteknik med inriktning mot funktionella textila material vid Högskolan i Borås (2009).

I was expert evaluator of the EU RTD programme GROWTH

The CRAFT evaluation, Brussels, October 1999.

Industrial collaboration:

<i>Nobelpharma AB, Göteborg</i>	Consultant	50%	1987-96
<i>Ingemansson Akustik och Mekanik, Göteborg</i>	Consultant	100%	1986
<i>Tännö mekaniska verkstad AB, Värnamo</i>	Project co-operation		1977-84
<i>Varbergs precision AB, Varberg,</i>	Chairmen of the board		1985-96
<i>Cochlear Bone Anchored Solution/Entific</i>	Project co-operation		1997-2010
<i>Oiido AB, Göteborg</i>	Founder and member of the board,		2003-2010
<i>P&B Research AB, Göteborg</i>	Founder		1985-2010
<i>Osseofon AB, Göteborg</i>	Founder		1997-
<i>Interacoustics A/S, Denmark</i>	Research collaboration		2005-
<i>Med-El, Österrike</i>	Research collaboration		2006-2008
<i>Ortofon A/S, Denmark</i>	Research collaboration		2009-
<i>Integrum AB, Göteborg</i>	Research collaboration		2009-
<i>Oticon Medical AB, Göteborg</i>	Research collaboration		2014-

Interdisciplinary research collaboration

<i>Öronkliniken, Sahlgrenska sjukhuset, Göteborg, Sweden</i>		1977-
<i>Hörselvårdskliniken, Sahlgrenska sjukhuset, Göteborg, Sweden</i>		1977-
<i>Department of Speech Pathology and Audiology, University of Alberta, Edmonton, Canada</i>		2003-
<i>COMPRU/ iRSM, Edmonton, Canada</i>		2003-
<i>Radboud University, Nijmegen, Holland</i>		2011-
<i>Halle, Germany</i>		2014-

Lectures and related staff work:**Lecturer and examiner in:**

Various micro electronic courses for F2, D3, E2, E3, E4	1986, 1990-2010, 2017-19
Biomedical instrumentation/medicinsk elektronik for E4, MPBME	2006 - 2010
Examiner and organizer of Medicine for the engineer/Medicin för tekniker	2001-2017
Development compulsory PSpice laboratory exercises for E1, F2, D2 and Z2	1998-2010
Director of Studies at the Department of Signals and Systems (studierektor)	1998-2003
Masters program coordinator – Biomedical engineering	2004-2006
Head of division: Biomedical engineering	2004-2007
Head of research group: Biomedical signals and systems	1998-2017
Member of MC2 board – Rektors representant	2014-2018

Publications and patent list

1. Peer reviewed full papers and significant conference papers

1. Tjellström, A., **Håkansson**, B., Lindström, J., Brånemark, P-I., Hallén O., Rosenhall, U. and Lejon, A., 1980, Analysis of the mechanical impedance of bone-anchored hearing aids. *Acta. Otolaryngol.* 89:85-92.
2. Tjellström, A. and **Håkansson**, B., 1981, The Bone-anchored hearing aid. *Hearing aid journal*, October, 10-32.
3. **Håkansson** B. 1984: The bone-anchored hearing aid: engineering aspects, thesis, Tech. Rep. 144, School of Electrical Engineering, Chalmers University of Technology, Göteborg, Sweden.
4. **Håkansson**, B., Tjellström, A., and Rosenhall, U., 1984, Hearing Thresholds with Direct Bone Conduction Versus Conventional Bone Conduction. *Scand. Audiol.* 13:3.
5. **Håkansson**, B., Tjellström, A., Rosenhall, U. and Carlsson, P., 1985, The Bone-Anchored Hearing Aid: Principle design and a psychoacoustical evaluation. *Acta. Otolaryngol.* 100:229-239.
6. **Håkansson**, B., Tjellström, A., and Rosenhall, U., 1985, Acceleration levels at Hearing Threshold with Direct Bone Conduction Versus Conventional Bone Conduction. *Acta Otolaryngol.* 100:240.
7. **Håkansson**, B., 1985, Den benförantrade hörapparaten - "Jag känner ingen apparat, jag bara hör". *AudioNytt*, Nr 1.
8. Carlsson, P., **Håkansson**, B., Rosenhall, U. and Tjellström, A., 1986, A speech to noise ratio test with the bone-anchored hearing aid - a comparative study. *Otolaryngology Head & Neck Surgery*, 94/4, 421-426.
9. **Håkansson**, B. Carlsson, P. and Tjellström, A., 1986, The mechanical point impedance of the human head, with and without skin penetration. *Journal of the Acoustic Society of America*, 80(4), 1065-1075.
10. **Håkansson**, B. and Carlsson, P., 1987, Bias errors in mechanical impedance data obtained with impedance heads. *Journal of Sound and Vibration*, 113, 173-183.
11. **Håkansson**, B. and Carlsson, P., 1989, Skull simulator for direct bone conduction hearing devices. *Scandinavian Audiology*, 18, 91-98.
12. **Håkansson**, B., Tjellström, A. and Carlsson, P., 1990, Percutaneous vs transcutaneous transducers for hearing by direct bone conduction. *Otolaryngology Head & Neck Surgery*, 102: 339-344.
13. **Håkansson**, B., Lidén, G., Tjellström, A., Ringdahl, A., Jacobsson, M., Carlsson, P. and Erlandson, B.E., 1990, Ten years of experience with the Swedish bone-anchored hearing system. *Annals of Otolology, Rhinology & Laryngology*, 99(10), Suppl 151, Part 2.
14. **Håkansson**, B., Carlsson, P., Tjellström, A., and Lidén, G., 1994, The bone-anchored hearing aid: Principal design and audiometric results, *ENT Journal*, (73)9, p 670-675.
15. **Håkansson**, B., Brandt, A., Carlsson, P. and Tjellström, A, 1994, Resonance frequencies of the human skull in vivo. *J. Acoust. Soc. Am.* 95 (3).
16. **Håkansson**, B., Carlsson, P., Tjellström, A., and Lidén, G. 1994, The bone-anchored hearing aid - Principal design and audiometric results, *Ear Nose and Throat Journal*, Vol 73, No 9, pp 670-675.
17. Carlsson, P., **Håkansson** B, and Ringdahl A, 1995, *Force threshold for hearing by direct bone conduction.* *J Acoust Soc Am*, 1995, 97(2), 1124-1129.
18. Tjellström, A., and **Håkansson**, B. 1995, *The bone-anchored hearing aid - design principles, indications, and long-term clinical results*, *Otolaryngologic Clinics of North America*, Vol. 28, No 1, pp 15.1 -- 15.20.
19. **Håkansson** B, Gingsjö A, 1995, Hörselskyddsanvändning, skottljudsbelastning, hörselproblem och attityder till hörselskydd bland Sveriges jägare. Technical Report 1:95, Laboratory of Medical Engineering, Chalmers University of Technology, Göteborg, Sweden, 1995. ISBN 91-7546-068-8.
20. **Håkansson**, B., Carlsson, P. Brandt, A., and Stenfelt, S., 1996, *Linearity of sound propagation through the human skull in vivo*, *J. Acoust. Soc. Am.* 96 (4).
21. Stenfelt, S., and **Håkansson**, B., 1996, *Air versus bone conduction: An equal loudness investigation*, *J. Acoust. Soc. Am.* 100 (4), Pt. 2, 2720. Abstract.
22. Carlsson, P. and **Håkansson** B E V, 1997, *The bone-anchored hearing aid: Reference quantities and functional gain.* *Ear & Hearing*, 1997, 18/1, 34-41.

23. **Håkansson** B, Gingsjö A, 1997, Hearing condition and ear protection among Swedish hunters in relation to sound exposure from gun shots, In PhD thesis by Gingsjö, A., *On transient noise and its reduction in hearing aids*, Technical report No 319, School of Electrical Engineering, Chalmers University of Technology, Göteborg, Sweden. ISBN 91-7197-544-6.
24. Gingsjö, A., **Håkansson**, B., Carlsson, P., 1997, Properties and detection of transient noise in an everyday environment, In PhD thesis by Gingsjö, A., *On transient noise and its reduction in hearing aids*, Technical report No 319, School of Electrical Engineering, Chalmers University of Technology, Göteborg, Sweden. ISBN 91-7197-544-6.
25. **Håkansson**, B., and Carlsson, P., 1998, *The bone-anchored hearing aid*, in *Osseointegration in Craniofacial Reconstruction*, edited by P.-I. Brånemark and D. Tolman, Quintessence Publishing Co. Inc., Chicago, 311-326.
26. Stenfelt, S., and **Håkansson**, B., 1998, *A miniaturized Artificial Mastoid Using a Skull Simulator*. *Scand. Audiol.* 27 (2), 67-76.
27. Stenfelt, S., and **Håkansson**, B., 1999, *Characteristics of bone conducted sound*, *J. Acoust. Soc. Am.* 105 (2), Pt. 2, 1084. Abstract.
28. Stenfelt, S., and **Håkansson**, B., 1999, *Sensitivity to bone-conducted sound: Excitation of the mastoid vs the teeth*, *Scand. Audiol.* 28(3), 190-198
29. Stenfelt, S., **Håkansson**, B., Jönsson, R., and Granström, G., 2000, *A bone-anchored hearing aid for patients with pure sensorineural hearing impairment – a pilot study*, *Scand Audiol*, 2000;29:175-185.
30. Stenfelt, S., **Håkansson**, B., and Tjellström, A., 2000, *Vibration characteristics of bone conducted sound in vitro* *J. Acoust. Soc. Am.* 107(1), 422-431.
31. Holgers, K.M., and **Håkansson**, B., 2001, *Titanium in audiology*, in *Titanium in medicine*, edited by D.M. Brunette, P. Tengvall, M. Textor and P. Thomsen, Springer, Berlin, 909--928.
32. Tjellström, A., **Håkansson**, B. and Granström, G. 2001, *The bone-anchored hearing aids – Current status in adults and children*, *Otolaryngologic Clinics of North America*, Vol. 34, No 2, pp 337 -- 364
33. Holgers, K.M., and **Håkansson**, B., 2002, *Sound stimulation via bone conduction for tinnitus relief: A pilot study*. *Int J of Audiol.* 41(5), 293-300.
34. Stenfelt, S., and **Håkansson**, B., 2002, *Air versus bone conduction: An equal loudness investigation*, *Hear. Res.*, 167(1-2), 1-12.
35. Priwin C, Stenfelt S, Edensvärd A, Granström G, Tjellström A, **Håkansson** B. An Evaluation of Bilateral Bone-anchored Hearing Aids. *Otolaryngol, Head, Neck Surg.* 2002;127:217.
36. Eeg-Olofsson M, Stenfelt S, Granström G, **Håkansson** B, Tjellström A. Bone Conduction Implant – BCI: A feasibility study for an implanted BCI. *Otolaryngol, Head, Neck Surg.* 2002;127:229-230.
37. Priwin C, Edensvärd A, Granström G, **Håkansson** B, Stenfelt S, Tjellström A. En audiologisk utvärdering av dubbelsidig benförankrad hörapparat, (BAHA). *Acta Soc. Med. Suec* 2002;111;1:265-266.
38. Eeg-Olofsson M, Granström G, **Håkansson** B, Stenfelt S, Tjellström A. Implanterbar BAHA. *Acta Soc. Med. Suec* 2002;111;1:265.
39. **Håkansson**, B., 2003, *The balanced electromagnetic separation transducer- A new bone conduction transducer*. *J. Acoust. Soc. Am.* 113 (2).
40. Priwin, C., Stenfelt, S., Granström, G., Tjellström, A., **Håkansson**, B., 2004 *Bilateral Bone-Anchored Hearing Aids (BAHAs): An audiometric evaluation*, *Laryngoscope* 114, 77-84.
41. Priwin, C., Stenfelt, S., Edensvard, A., Granström, G., Tjellström, A., and **Håkansson**, B., 2005, *Unilateral versus bilateral bone-anchored hearing aids (BAHAs)*, *Cochlear Implants Int.* 6, suppl. 1, 79-81.
42. Reinfeldt, S., Stenfelt, S., and **Håkansson** B, 2006, *Transcranial transmission of bone conducted sound measured acoustically and psychoacoustically.*, *Proceeding of the 4th International Symposium of Middle Ear Mechanics in Research and Otology*, Zürich, Switzerland, 2006: 276-281.
43. **Håkansson**, B., 2006, "Technical development of the BAHA - A historical review covering the first twenty years". *Firmly Anchored, Baha Users Support (Kent)*, Issue 17. Autumn 2006.
44. Reinfeldt, S., Stenfelt, S., Good, T., and **Håkansson**, B., 2007, *Bone conduction transmission from a sound field estimated by thresholds, ear canal pressure and skull vibrations*, *J Acoust Soc Am.* 121(3): 1576-1587.

45. **Håkansson B.**, Måns Eeg-Olofsson, Sabine Reinfeldt, Stefan Stenfelt, and Gösta Granström, 2008, *Percutaneous Versus Transcutaneous Bone Conduction Implant System: A Feasibility Study on a Cadaver Head*. *Otology and Neurology* 29, 1132-1139.
46. **Håkansson B.**, Sabine Reinfeldt, Måns Eeg-Olofsson, Per Östli, Hamidreza Taghavi, Johannes Adler, John Gabrielsson, Stefan Stenfelt, Gösta Granström, *A novel bone conduction implant (BCI) – engineering aspects and preclinical studies*, *International journal of audiology*, March 2010, Vol. 49, No. 3 , Pages 203-215.
47. Sabine Reinfeldt, Per Östli, **Bo Håkansson** and Stefan Stenfelt, *Hearing one's own voice during phoneme vocalization—Transmission by air and bone conduction*, *J. Acoust. Soc. Am.* 128 (2), August 2010.
48. Måns Eeg-Olofsson, Stefan Stenfelt, **Bo Håkansson**, Hamidreza Taghavi, Sabine Reinfeldt, Per Östli, Gösta Granström. 2011. *Optimal position of a new bone conduction implant*, *Cochlear implants international*, 12 (Suppl 1), S136-8.
49. Hodgetts W. E.; Hagler P.; **Håkansson B.**; Soli S.; 2010, *Technology-Limited and Patient-Derived Versus Audibility-Derived Fittings in Baha Users: A Validation Study*. *Ear and Hearing*:31;1-9.
50. Hodgetts William E., **Håkansson Bo E.V.**, Hagler Paul, Soli Sigfrid, 2010, *A comparison of three approaches to verifying aided Baha output*, *International Journal of Audiology*; 49: 286–295.
51. **Håkansson B.**, 2011, *The future of bone conduction hearing devices*, *Adv Otorhinolaryngol. Basel, Karger*, vol 71, pp 140-152.
52. Hamidreza Taghavi, **Bo Håkansson**, Sabine Reinfeldt, Måns Eeg-Olofsson, Shirin Akhshijan. 2012. *Feedback Analysis in Percutaneous Bone-Conduction Device and Bone-Conduction Implant on a Dry Cranium*, *Otology & Neurotology*, 33 (3): 413–420.
53. Hamidreza Taghavi, **Bo Håkansson**, Sabine Reinfeldt. 2012. *A Novel Bone Conduction Implant - Analog Radio Frequency Data and Power Link Design*, *Proceeding of the IASTED International Conference on Biomedical Engineering (BioMed 2012)*, 327-335.
54. M. Ortiz-Catalan, R. Brånemark, **B. Håkansson**, and J. Delbeke, “*On the viability of implantable electrodes for the natural control of artificial limbs: Review and discussion*”, *Biomed Eng Online*, vol. 11, p. 33, Jun. 2012 – “Highly accessed”
55. *M. Ortiz-Catalan, R. Brånemark, and **B. Håkansson**, “*Biologically Inspired Algorithms Applied to Prosthetic Control*”, in *Proceedings of the IASTED International Conference, Biomedical Engineering, 2012*, no. BioMed, pp. 7–15.
56. *M. Ortiz-Catalan, R. Brånemark, and **B. Håkansson**, “*Evaluation of Classifier Topologies for the Real-time Classification of Simultaneous Limb motions*,” 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Osaka Jul 3-7, 2013.
57. Reinfeldt S, Stenfelt S, **Håkansson B.** 2013. *Estimation of bone conduction skull transmission by hearing thresholds and ear-canal sound pressure*. *Hearing Research*, 299: 19-28.
58. M. Ortiz-Catalan, J. Marin-Millan, J. Delbeke, **B. Håkansson**, and R. Brånemark, “*Effect on signal-to-noise ratio of splitting the continuous contacts of cuff electrodes into smaller recording areas*”, *J Neuroengineering Rehabil*, vol. 10, no. 22, 2013.
59. Hamidreza Taghavi, **Bo Håkansson**, Måns Eeg-Olofsson, Carina B. Johansson, Anders Tjellström, Sabine Reinfeldt, Tomas Bergqvist, and Joakim Olsson, “*A Vibration Investigation of a Flat Surface Contact to Skull Bone for Direct Bone Conduction Transmission in Sheep Skulls In Vivo*”, *Accepted for publication, Otology & Neurotology*, 34 , 690 – 698, 2013.
60. Måns Eeg-Olofsson, Stefan Stenfelt, Hamidreza Taghavi, Sabine Reinfeldt, **Bo Håkansson**, Tomas Tengstrand, Caterina Finizia. 2013. *Transmission of bone conducted sound – correlation between hearing perception and cochlear vibration*, *Hearing Research* 306:11-20.
61. Ortiz-Catalan, M., Brånemark, R., and **Håkansson, B.**, *BioPatRec: A modular research platform for the control of artificial limbs based on pattern recognition algorithms*, *Code Source for Medicine and Biology*, 2013, 8:11.

62. Ortiz-Catalan, M., **Håkansson, B.**, and Brånemark, R., *Real-time classification of simultaneous hand and wrist motions using Artificial Neural Networks with variable threshold outputs*, Proceedings of the XXXIV International Conference on Artificial Neural Networks (ICANN), Amsterdam, May 15-16, 2013, 77:1159-1164.
63. Karl-Johan Fredén Jansson, **Bo Håkansson**, Sabine Reinfeldt, Hamidreza Taghavi, Måns Eeg-Olofsson. 2014, *MRI Induced Torque and Demagnetization in Retention Magnets for a Bone Conduction Implant*. IEEE Trans Biomed Eng, 61(6):1887-1893.
64. Karl-Johan Fredén Jansson, **Bo Håkansson**, Leif Johannsen & Tomas Tengstrand, 2015, *Electro-acoustic performance of the new bone vibrator Radioear B81: A comparison with the conventional Radioear B71*, Int J Audiol, Vol. 54: 334-340.
65. Måns Eeg-Olofsson, **Bo Håkansson**, Sabine Reinfeldt, Hamidreza Taghavi, Henrik Lund, Karl-Johan Fredén-Jansson, Emil Håkansson, Joacim Stalfors, 2014, *“The Bone Conduction Implant-First implantation, surgical and audiological aspects”*, Otol Neurotol 35(4):679-685.
66. Eeg-Olofsson M., Lith A., **Håkansson B.**, Reinfeldt S., Taghavi H., Fredén Jansson K.-J., Johansson C.B., 2014, *“Evaluation of Bone Tissue Formation in a Flat Surface Attachment of a Bone Conduction Implant: A Pilot Study in a Sheep Model”*, Audiol Neurotol Extra, 4:62-76.
67. Sabine Reinfeldt, **Bo Håkansson**, Hamidreza Taghavi, Måns Eeg-Olofsson. 2014, *Bone Conduction Hearing Sensitivity in Normal Hearing Subjects – Transcutaneously at BAHA vs BCI position*, Int J Audiol, 53(6):360-369.
68. Ortiz-Catalan, M., **Håkansson, B.**, and Brånemark, R., 2014, *Osseointegrated human-machine gateway for long-term stable sensory feedback and motor control of artificial limbs*, Science Translational Medicine 6, 257 re6.
69. Ortiz-Catalan, M., **Håkansson, B.**, and Brånemark, R., 2014, *Real-time and simultaneous control of artificial limbs based on pattern recognition algorithms*, IEEE Transactions on Neural Systems and Rehabilitation Engineering, 22 (4), 756-764.
70. Ortiz-Catalan, M., Sander, N., Kristoffersen, M., **Håkansson, B.**, and Brånemark, R., *Treatment of phantom limb pain (PLP) based on augmented reality and gaming controlled by myoelectric pattern recognition: a case study of a chronic PLP patient*, Frontiers in Neuroscience, 2014, 8:24.
71. Reinfeldt S., Östli P., **Håkansson B.**, Taghavi H. & Eeg-Olofsson M., *Study of the feasible size of a bone-conduction implant (BCI) transducer in the temporal bone*, 2015, Otol Neurotol. 36(4):631-637.
72. Reinfeldt S, **Håkansson B**, Taghavi H, Eeg-Olofsson M, *“New developments in bone-conduction hearing implants: a review”*, Medical Devices: Evidence and Research, 2015; 8:79-93.
73. Sabine Reinfeldt, **Bo Håkansson**, Hamidreza Taghavi, Karl-Johan Fredén Jansson, Måns Eeg-Olofsson. 2015. *The bone conduction implant – clinical results of the first six patients*. Int J Audiol, 54(6):408-416.
74. Hamidreza Taghavi, **Bo Håkansson**, Sabine Reinfeldt, Måns Eeg-Olofsson, Karl-Johan Fredén Jansson, Emil Håkansson, Bayan Nasri, 2015, *Technical Design of a New Bone Conduction Implant (BCI) System*, Int J Audiol, 54(10):736-744.
75. Karl-Johan Fredén Jansson, Cristina Rigato, **Bo Håkansson**, Sabine Reinfeldt, Måns Eeg-Olofsson. 2015. *Magnetic Resonance Imaging Investigation of the Bone Conduction Implant – a pilot study at 1.5 Tesla*. Medical Devices: Evidence and Research. Volume 2015:8 Pages 413-423.
76. Ortiz-Catalan, M., Rouhani, F., Brånemark, R., and **Håkansson, B.**, *Offline Accuracy: A Potentially Misleading Metric in Myoelectric Pattern Recognition for Prosthetic Control*, in *Proceedings of the 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. Milan, Aug. 25-29, 2015.
77. Mastinu, E., Ortiz-Catalan, M., and **Håkansson, B.**, *Analog Front-Ends Comparison in the Way of a Portable, Low-Power and Low-Cost EMG Controller Based on Pattern Recognition*, in *Proceedings of the 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. Milan, Aug. 25-29, 2015.
78. Monksfield, Hultcrantz, Reinfeldt, **Håkansson**, Eeg-Olofsson; *Bone Conduction Implant, clinical trial of a new transcutaneous implant and results so far*. The Journal of Laryngology & Otology 130(S3):S51, May 2016.

79. Rigato C, Reinfeldt S, **Håkansson B**, Jansson KJ, Hol MK, Eeg-Olofsson M., Audiometric Comparison Between the First Patients With the Transcutaneous Bone Conduction Implant and Matched Percutaneous Bone Anchored Hearing Device Users, *Audiology & Neurotology* 2016 Oct;37(9):1381-7.
80. Clemente F, **Håkansson B**, Cipriani C, Wessberg J, Kulbacka-Ortiz K, Brånemark R, Fredén Jansson KJ, Ortiz-Catalan M, Touch and Hearing Mediate Osseoperception. *Sci Rep.* 2017 Mar 28;7:45363.
81. Fredén Jansson KJ, **Håkansson B**, Reinfeldt S, Fröhlich L, Rahne T. Vibrotactile Thresholds on the Mastoid and Forehead Position of Deaf Patients Using Radioear B71 and B81. *Ear Hear.* 2017 Jul 21.
82. Mastinu, E., **Håkansson, B.**, and Ortiz-Catalan, M., Low-cost, open source bioelectric signal acquisition system, *Proceedings of the 14th Annual International Conference on Wearable and Implantable Body Sensor Networks of the IEEE Engineering in Medicine and Biology Society*, May 9-12, 2017, Eindhoven, Netherlands , vol. 26, no. 4, pp. 261-263, 2017.
83. Mastinu, E., Doguet, P., Botquin, Y., **Håkansson, B.**, and Ortiz-Catalan, M., _Embedded System for Prosthetic Control Using Implanted Neuromuscular Interfaces Accessed Via an Osseointegrated Implant_, *IEEE Transactions in Biomedical Circuits and Systems*, vol. 11, no. 4, pp. 867-877, 2017.
84. Fredén Jansson, K-J., **Håkansson, B.**, Reinfeldt, S. and Rigato, C., Robustness and Lifetime of Active Transcutaneous Bone Conduction Devices. In PhD Thesis no 4249, Chalmers 2017, ISBN 978-91-7597-568,.
85. Max Ortiz-Catalan, Alexander Thesleff; Rickard Brånemark; **Bo Håkansson**, Biomechanical characterisation of bone-anchored implant systems for amputation limb prostheses: a systematic review, Accepted for publication in *Annals of Biomedical Engineering*, dec 2017.
86. Lendaro E., Mastinu E., **Håkansson B.**, and Ortiz-Catalan M., Real-time classification of non-weight bearing lower limb movements using EMG to facilitate phantom motor execution: engineering and case study application on phantom limb pain, *Frontiers in Neurology*, 2017, 8:470.
87. Nilsson S., **Håkansson B.**, and Ortiz-Catalan M., Classification Complexity in Myoelectric Pattern Recognition, *Journal of NeuroEngineering Rehabilitation*, 2017, 14:68.
88. C. Rigato, S. Reinfeldt, **B. Håkansson**, K.J. Fredén Jansson, E. Renvall and M. Eeg-Olofsson, Direct bone conduction stimulation: ipsilateral effect of different transducer attachments in active transcutaneous devices, *Hear Res.* 2018 Apr;361:103-112.
89. **Bo Håkansson**, Karl-Johan Fredén Jansson, Tomas Tengstrand, Leif Johannsen, Måns Eeg-Olofsson, Cristina Rigato, Elisabeth Dahlström, Sabine Reinfeldt, VEMP using a new low frequency bone conduction transducer, *Medical Devices: Evidence and Research* 2018;11 301–312.
90. Mastinu E., Ahlberg J., Lendaro E., **Håkansson B.**, and Ortiz-Catalan M., An alternative myoelectric pattern recognition approach for the control of hand prostheses: A case study of use in daily life by a dysmelia subject, *IEEE Journal of Translational Engineering in Health and Medicine*, 2018, 6 (1), 1-12.
91. Thesleff A., Brånemark R., **Håkansson B.**, and Ortiz-Catalan M., Biomechanical characterisation of bone-anchored implant systems for amputation limb prostheses: a systematic review, *Annals of Biomedical Engineering*, 2018, 46 (3), 377-391.
92. Fredén Jansson, K-J., **Håkansson, B.**, Reinfeldt, S. and Rigato, C., Robustness and Lifetime of Active Transcutaneous Bone Conduction Devices. *Med Devices (Auckl).* 2019; 12: 89–100.
93. Sabine Reinfeldt, Cristina Rigato, **Bo Håkansson**, Karl-Johan Fredén Jansson, Måns Eeg-Olofsson, Nasal sound pressure as objective verification of implant in active transcutaneous bone conduction devices, *Medical Devices: Evidence and Research* 2019;12 193–202.

94. Enzo Mastinu, Francesco Clemente, Paolo Sassu, Oskar Aszmann, Rickard Brånemark, **Bo Håkansson**, Marco Controzzi, Christian Cipriani and Max Ortiz-Catalan, Grip control and motor coordination with implanted and surface electrodes while grasping with an osseointegrated prosthetic hand, *Journal of NeuroEngineering and Rehabilitation*, 2019, 16:49, <https://doi.org/10.1186/s12984-019-0511-2>.
95. Cristina Rigato, Sabine Reinfeldt, **Bo Håkansson**, Karl-Johan Fredén Jansson, Erik Renvall, Måns Eeg-Olofsson, Effect of transducer attachment on vibration transmission and transcranial attenuation for direct drive bone conduction stimulation, *Hearing Research*, Volume 381, 15 September 2019.
96. **Håkansson, Bo**; Reinfeldt, Sabine; Persson, Ann-Charlotte; Fredén Jansson, Karl-Johan; Rigato, Cristina; Hultcrantz, Malou; Eeg-Olofsson, Måns; The bone conduction implant – a review and one year follow up, *International Journal of Audiology*, 58:12, pp 945-955, 2019.
97. Enzo Mastinu, Leonard F. Engels, Francesco Clemente, Mariama Dione, Paolo Sassu, Oskar Aszmann, Rickard Brånemark, **Bo Håkansson**, Marco Controzzi, Johan Wessberg, Christian Cipriani, and Max Ortiz-Catalan, Motor coordination in closed-loop control of neuromusculoskeletal limb prostheses, submitted to *ScienceRobotics*, Sept 2019.
98. Ortiz-Catalan M., Mastinu E., Naber A., Brånemark R. and **Håkansson B.**, Comment on “A neural interface provides long-term stable natural touch perception”, *Journal of NeuroEngineering and Rehabilitation*, under review 2019.
99. Persson, A-C, Reinfeldt, S, **Håkansson, B**, Fredén Jansson, K-J, Rigato, C, Eeg-Olofsson, M, Three year follow-up with the Bone Conduction Implant, *Audiology and Neurotology*, 2020.
100. **Håkansson, B.**, Woelflin, F.; Tjellström, A.; Hodgetts, W., The mechanical impedance of the human skull via direct bone conduction implants, submitted to *Ear and Hearing* 2020.

2. Other papers – popular articles and short abstracts

1. **Håkansson**, B., 1985, The bone-anchored hearing aid - a long-awaited addition to selection of hearing aids. Chalmers E-85 Trainee, Appointment Committee, travel report.
2. Carlsson, P. and **Håkansson**, B., 1988, A transducer for hearing by direct bone conduction. Technical Report 2:88, Research Laboratory of Medical Electronics, Chalmers University of Technology, Göteborg, Sweden.
3. **Håkansson**, B., 1989, STU-stödd hörapparat - en unik världsartikel. STU info nr 712-1989.
4. **Håkansson**, B., and Carlsson, P., 1989, Developing the bone anchored hearing aid. Nobelpharma news, 3/1.
5. **Håkansson**, B., Lidén, G., Tjellström, A., Jacobsson, M., Carlsson, Erlandson, B.E., and P. Ringdahl, A. 1992, Tio års erfarenhet av den benförankrade hörapparaten. Audionytt, 19(1-2), 28-31.
6. Carlsson P. and **Håkansson** B. 1994, Functional Gain of the Bone-Anchored Hearing aid, 1-95, Nobelpharma International Updates.
7. Carlsson P. and **Håkansson** B. 1994, Reference Quantities of the Bone-Anchored Hearing aid, 2-94, Nobelpharma International Updates.
8. Stenfelt, S., **Håkansson**, B., and Tjellström, A., 1999, Vibration characteristics of bone conducted sound in vitro, Collected papers from the joint meeting "Berlin 99" 137th meeting of the acoustical society of America, 2nd convention of the EAA: Forum Acousticum.
9. Granström G, Bergström K, Carlsson P, Holgers K-M, **Håkansson** B, Odersjö M, Ringdahl A, Tjellström A. Extraoral osseointegrering, erfarenheter från 21 års verksamhet. Svensk ÖNH-tidskrift. 1999;1:15. (R)
10. Stenfelt, S., and **Håkansson**, B., 1999, Cochlear response to bone conducted sound, Proceedings of Sixth International Congress on Sound and Vibration, Copenhagen, vol. 3, 1171-1178.
11. **Håkansson**, B., 2000, Implanterbara hörapparater, Audionomen nr 4, 11-17.
12. Priwin C, Stenfelt S, Edensvärd A, Granström G, Tjellström A, **Håkansson** B., 2003, En audiologisk utvärdering av dubbelsidig benförankrad hörapparat (BAHA). Svensk ÖNH-tidskrift 2003;10:18.
13. **AudioNytt Dec 2012 two articles**
14. Auris, 2013
15. Audiology infos, 2013
16. Forskning och framsteg, 2013
17. Cupé SJ, 2013
18. Hemmets journal, July 2013
19. Pan European networks 2013
20. Allers, 2013
21. Hemmets veckotidning 2015
22. Auris 2018

3. Peer reviewed conference contributions abstracts and invited talks

1. Brandt, A., **Håkansson**, B., Stenfelt, S., and Tjellström A. (1996) "Transcranial attenuation measured by a laser doppler vibrometer," 2nd International symposium on electronic implants in otology and conventional hearing aids, Göteborg, Sweden.
2. **Håkansson**, B., Stenfelt, S., Carlsson, P., and Tjellström, A. (1996) "Sensitivity to bone conducted sound: Teeth versus mastoid," 2nd International symposium on electronic implants in otology and conventional hearing aids, Göteborg, Sweden.
3. Ringdahl, A., **Håkansson**, B., Carlsson, P., Israelsson, B., Jönsson, R., and Stenfelt, S. (1996) "Modified bone anchored hearing aids tested on four patients with sensorineural high frequency hearing loss," 2nd International symposium on electronic implants in otology and conventional hearing aids, Göteborg, Sweden.
4. Stenfelt, S., **Håkansson** B., and Carlsson, P. (1996) "Air versus bone conduction: An equal loudness investigation," 2nd International symposium on electronic implants in otology and conventional hearing aids, Göteborg, Sweden.
5. Stenfelt, S. and **Håkansson** B., (1996) "Air versus bone conduction: An equal loudness investigation," 3rd joint meeting of the Acoustical Societies of America and Japan, Honolulu, Hawaii.
6. Stenfelt, S. and **Håkansson**, B. (1997) "A bone anchored hearing aid for patients with a pure sensorineural hearing loss," Second biennial hearing aid research and development conference, Bethesda, Maryland.
7. Stenfelt, S. and **Håkansson**, B. (1997) "A bone-anchored hearing aid for patients with pure sensorineural hearing loss," Svenska läkaresällskapets riksstämman, Stockholm.
8. Stenfelt, S. and **Håkansson**, B. (1998) "Characteristics of bone conducted sound," the joint meeting of the Acoustical Society of America and EAA: Forum Acousticum, Berlin, Germany.
9. Stenfelt, S. and **Håkansson**, B. (1998) "Cochlear response to bone conducted sound," accepted for presentation at the Sixth international congress on sound and vibration, Copenhagen, Denmark, (5 - 8 July, 1999).
10. Stenfelt, S., **Håkansson**, B., and Tjellström, A., (1999), "Vibration characteristics of bone conducted sound in vitro", Collected papers from the joint meeting "Berlin 99" 137th meeting of the acoustical society of America, 2nd convention of the EAA: Forum Acousticum.
11. Stenfelt, S., **Håkansson**, B., (1999) "Cochlear response to bone conducted sound," Proceedings of Sixth International Congress on Sound and Vibration, Copenhagen, vol. 3, 1171-1178.
12. **Håkansson**, B. (2000), Implanterbara hörapparater, TeMA Hörsel 2000, Karlstad, Sverige.
13. **Håkansson**, B., Tjellström, A., and Stenfelt, S (2000) "An implantable bone conduction hearing aid," 3rd International Congress on Electronic Implants in Otology and Conventional Hearing Aids, Birmingham, United Kingdom.
14. Stenfelt, S., **Håkansson**, B., and Goode, R. (2000) "Review and recent advances in bone conduction physiology," 3rd International Congress on Electronic Implants in Otology and Conventional Hearing Aids, Birmingham, United Kingdom.
15. **Håkansson**, B., Tjellström, A., and Stenfelt, S (2000) "An implantable bone conduction hearing aid," 3rd International Congress on Electronic Implants in Otology and Conventional Hearing Aids, Birmingham, United Kingdom.
16. **Håkansson**, B. (2001), En ny audiometrivibrator, Sveriges tekniska audiologers förening (STAF), Örebro, Sverige.
17. **Håkansson**, B. (2002), The BEST - A new audiometric transducer, STAF, Trollhättan.
18. **Håkansson**, B., and Stenfelt, S. (2002) "The BEST – A new audiometric transducer" the XXVI International Congress of Audiology, Melbourne, Australia
19. **Håkansson**, B., Stenfelt, S., Tjellström, A., Granström, G. (2002) "An implantable bone conduction hearing aid" the XXVI International Congress of Audiology, Melbourne, Australia
20. Eeg-Olofsson, M., Stenfelt, S., Granström, G., **Håkansson**, H., and Tjellstrom, A., (2002) "Bone Conduction Implant (BCI): A Feasibility Study for an Implanted BCI," American Academy of Otolaryngology--Head and Neck Surgery annual meeting, San Diego, California
21. Priwin, C., Stenfelt, S., Edensvärd, A., Granström, G., Tjellstrom, A., and **Håkansson**, B. (2002) "An Evaluation of Bilateral Bone-anchored Hearing Aids," American Academy of Otolaryngology--Head and Neck Surgery annual meeting, San Diego, California

22. Eeg-Olofsson, M., Stenfelt, S., Granstrom, G., **Håkansson, B.**, Tjellstrom, A., Johansson, B. R. (2003) "Is it possible to implant or semi-implant a bone anchored hearing aid (BAHA)," 4th International Symposium on Electronic Implants in Otolaryngology and Conventional Hearing, Toulouse, France
23. Priwin, C, Stenfelt, S., Edensvärd, A., Granström, G., Tjellström, A., **Håkansson, B.** (2003) "Unilateral Versus Bilateral Bone-anchored Hearing Aids (BAHAs)," 4th International Symposium on Electronic Implants in Otolaryngology and Conventional Hearing, Toulouse, France
24. **Håkansson, B.** (2005) "Implantable hearing aids-round table," 7th European Federation of Audiological Societies Congress, Göteborg, Sweden
25. **Håkansson, B.**, Stenfelt, S., (2005) "Bone conduction hearing threshold testing," 7th European Federation of Audiological Societies Congress, Göteborg, Sweden.
26. Reinfeldt, S., Stenfelt, S., **Håkansson, B.** (2005) "Bone conduction sensitivity to sound field stimulation," 7th European Federation of Audiological Societies Congress, Göteborg, Sweden
27. **Håkansson, B.**, (2006), "Balanced Electromagnetic Separation Transducer", IX Biomaterial club meeting, Val Gardena, Italy
28. Hodgetts W, **Håkansson B.** (2006), "Construct Validity of a direct Approach to the Assessment of Hearing through the Baha Implant in Mechanical Quantities", IX Biomaterial club meeting, Val Gardena, Italy
29. **Håkansson, B.**, (2006), "Balanserad Elektromagnetisk Separation Transducer - olika tillämpningar", TeMA Hörsel 2006, Göteborg.
30. Hodgetts, B, **Håkansson, B.** Soli, S (2006), "Two In-Situ Approaches to Assessing the Audibility of Amplified Speech for BAHA Users", International Hearing Aid Research Conference (IHCON), Lake Tahoe CA, USA.
31. Brandt, A., **Håkansson, B.**, and Stenfelt, S. (2006) "Properties of bone conduction hearing," XXIV International Modal Analysis Conference, St. Louis, Missouri
32. Reinfeldt, S., Stenfelt, S., Goode, T., **Håkansson, B.** (2006) "Bone conduction sensitivity to sound field stimulation: Measurements of REAT, MIRE, and vibrations of the skull bone," 31st Annual Hearing Conservation Conference, Tampa, Florida
33. Reinfeldt, S., Stenfelt, S., **Håkansson, B.** (2006) "Transkranial dämpning av benledning ljud mätt akustiskt och psykoakustiskt," TeMA Hörsel 2006, Göteborg
34. Reinfeldt, S., Stenfelt, S., **Håkansson, B.** (2006) "Transcranial attenuation of bone conducted sound, acoustically and psycho acoustically measured," 4th International Symposium on Middle Ear Mechanics in Research and Otolaryngology, Zurich, Switzerland.
35. **Håkansson, B.** (2006), "The Bone Anchored Hearing Aid, A historic review and future perspectives", 4th International Symposium on Middle Ear Mechanics in Research and Otolaryngology, Zurich, Switzerland.
36. **Håkansson, B.** (2006), Round table: "The Baha® – Where are we and where are we going?", 4th International Symposium on Middle Ear Mechanics in Research and Otolaryngology, Zurich, Switzerland.
37. Stenfelt, S., **Håkansson, B.** (2006), "An implantable hearing aid using bone conduction transmission," 28th International Congress of Audiology, Innsbruck, Austria
38. Reinfeldt, S., Stenfelt, S., **Håkansson, B.** (2006) "Transmission of bone conducted sound measured acoustically and psycho-acoustically," 4th joint meeting of the Acoustical Societies of America and Japan, Honolulu, Hawaii
39. **Håkansson, B.** (2006), "Balanced Electromagnetic Separation Transducer Basic principle and different applications", Baltic-Nordic Acoustics Meeting 2006, Gothenburg, Sweden.
40. Reinfeldt, S., Stenfelt, S., **Håkansson, B.** (2006), "Bone conducted transmission from a sound field estimated by thresholds, ear canal sound pressure and skull vibrations", Baltic-Nordic Acoustics Meeting 2006, Gothenburg, Sweden.
41. **Håkansson B.**, Eeg-Olofsson M., Reinfeldt S., Stenfelt S.3, Granström G., "A transcutaneous bone conduction hearing device– a feasibility study of a complete system", First international symposium: Bone conduction hearing and osseointegration, 2007, Halifax, Nova Scotia, Canada

42. **Håkansson B.**, Eeg-Olofsson M., Reinfeldt S., Stenfelt S., Granström G., 2008 , “A transcutaneous bone conduction implant system– a future alternative to the percutaneous BAHA system?”, IHCON (International Hearing Aid Research Conference), Lake Tahoe, USA.
43. **Håkansson, B.**, Reinfeldt, S., Eeg-Olofsson, M., Östli, P., Taghavi, H., Gabrielsson, J., Adler, J., Stenfelt, S., and Granström, G. (2009) "A novel bone conduction implant (BCI)", 2nd International Symposium on Bone Conduction Hearing - Craniofacial Osseointegration”, Göteborg, Sweden.
44. Reinfeldt, S., Östli, P., Stenfelt, S., and **Håkansson, B.** (2009), "Differences in bone and air conduction transmission of one's own voice during phoneme vocalization" , International Symposium on Bone Conduction Hearing - Craniofacial Osseointegration, Göteborg, Sweden.
45. Östli P.; **Håkansson B.**; Reinfeldt S.; Taghavi H., (2009), “Optimization of the BEST transducer for a transcutaneous bone conduction hearing system”, 2nd International Symposium on Bone Conduction Hearing - Craniofacial Osseointegration, Göteborg, Sweden.
46. Taghavi, H.; **Håkansson, B.**; Reinfeldt, S.; Östli, P., (2009), Radio Frequency (RF) power management and speech signal transmission in a wireless solution for Transcutaneous Bone Conduction Implant Systems,
47. Esmaeili, S.; Arjomand, A.; Stalfors, J.; Östli, P.; **Håkansson, B.**; Eeg-Olofsson, M.; Granström, G., (2009), Geometrical analysis of temporal bone for Bone Conduction Implant, 2nd International Symposium on Bone Conduction Hearing - Craniofacial Osseointegration, Göteborg, Sweden.
48. Bosman, A; **Håkansson, B**; Bance, M; Hodgetts, B; Snik, A; Stenfelt, S. (2009), Bone conduction physiology, sound propagation, 2nd International Symposium on Bone Conduction Hearing - Craniofacial Osseointegration, Göteborg, Sweden.
49. **Håkansson, B.**; Mylanus, E., Bance, M., Hodgetts, B., Soli, S, Stenfelt, S. àWengen, D., (2009), Panel on BAHA and implantable hearing aids in the future, 2nd International Symposium on Bone Conduction Hearing - Craniofacial Osseointegration, Göteborg, Sweden.
50. Granström, G.; **Håkansson, B.**; Eeg-Olofsson, M., (2009), Transcutaneous Bone Conduction Implant (BCI). Surgical and Audiological aspects, 2nd International Symposium on Bone Conduction Hearing - Craniofacial Osseointegration, Göteborg, Sweden.
51. **Håkansson, B.**; STAF dagarna, 17-19 March, 2010, Eskilstuna.
52. **Håkansson, B.**; Audionomdagarna, 27-28 May, 2010, Västerås.
53. Taghavi H., **Håkansson, B.**, Reinfeldt S., Eeg-Olofsson M., Granström G.; A Novel Bone Conduction Implant (BCI) System, CI 2010, 30/6-3/7, 2010, Stockholm.
54. Taghavi H., **Håkansson, B.**, Reinfeldt S., Eeg-Olofsson M., Granström G.; A Novel Bone Conduction Implant (BCI) System, IHCON 2010, 11-15 August, Lake Tahoe, USA.
55. Östli P., **Håkansson B.**, Lundgren H., Reinfeldt S., Taghavi H., Variability in Bone Conduction Force Output Due to Intersubject Differences in Mechanical Impedance of the Skin, IHCON 2010, 11-15 August, Lake Tahoe, USA.
56. **Håkansson, B.**; Young Scientist Forum, 22 September, 2010 Göteborg.
57. **Håkansson, B.**; Läkarestämman - Årsmöte Medicinsk teknik och fysik, 1 December 2010, Göteborg.
58. **Håkansson Bo.**, “Bone Conduction Hearing Devices: Past, Present and Future. Third International Symposium on Bone Conduction Hearing – Craniofacial Osseointegration, 23-26 March, 2011, Sarasota USA (Invited presentation).
59. Taghavi H; **Håkansson B**; Reinfeldt S; Östli P; Eeg-Olofsson M. “A Novel Bone Conduction Implant (BCI) System”, Third International Symposium on Bone Conduction Hearing – Craniofacial Osseointegration, 23-26 March, 2011, Sarasota USA (presentation).
60. Eeg-Olofsson Måns, **Håkansson Bo**, Taghavi Hamidreza, Reinfeldt Sabine, Östli Per, Tengstrand Tomas, Stenfelt Stefan. ”Correlation between the cochlear promontory and hearing perception-a pilot study”, Third International Symposium on Bone Conduction Hearing – Craniofacial Osseointegration, 23-26 March, 2011, Sarasota USA (poster).

61. Per Östli, Joacim Stalfors, **Bo Håkansson**, Lennart Svensson, Sabine Reinfeldt, Måns Eeg-Olofsson, Hamidreza Taghavi. "Study of the Feasible Size of a Bone Conduction Implant (BCI) in the Temporal Bone", Third International Symposium on Bone Conduction Hearing – Craniofacial Osseointegration, 23-26 March, 2011, Sarasota USA (poster).
62. Reinfeldt S; Östli. P; **Håkansson B**; Taghavi H; Stenfelt S. "Hearing One's Own Voice, Sensitivity Difference between Bone and Air Conduction Transmission", Third International Symposium on Bone Conduction Hearing – Craniofacial Osseointegration, 23-26 March, 2011, Sarasota USA (poster).
63. **Håkansson B.**; Vinnova konferens, "Innovationer för framtidens hälsa", 20 oktober, 2011
64. **Håkansson, B**; HRF Kungsbacka, 27 oktober 2011, Kungsbacka.
65. **Håkansson, B**; Läkarsällskapets Årsmöte Medicinsk teknik och fysik, Erna Ebelings pris, 30 November 2011, Stockholm.
66. Hamidreza Taghav, **Bo Håkansson** et al: "A novel bone conduction implant – Analog radio frequency data and power link design", Biomed 2012, Innsbruck, Austria.
67. **Bo Håkansson**: TeMA Hörsel Linköping "Bone Conduction Hearing Devices In The Future", mars 2012.
68. Sabine Reinfeldt, **Bo Håkansson** et al, TeMA Hörsel Linköping, "Transkutan benledningskänslighet för normalhörande", mars 2012.
69. Hamidreza Taghavi, **Bo Håkansson** et al., TeMA Hörsel Linköping, "A Novel Bone Conduction Implant (BCI) System", mars 2012.
70. Måns Eeg-Olofsson, **Bo Håkansson** et al: CI 2012, Baltimore USA, "Transmission of bone conducted sound etc", april 2012.
71. Sabine Reinfeldt, **Bo Håkansson** et al, CI 2012, Baltimore USA, "Bone Conduction Hearing Sensitivity in Normal Hearing Subjects – Transcutaneous at BAHA vs BCI position", maj 2012.
72. **Bo Håkansson** et al: CI 2012, Baltimore USA, "The Bone Conduction Implant (BCI)", april 2012.
73. Hamidreza Taghavi, **Bo Håkansson** et al, CI2012, Baltimore, USA, "Feedback analysis in PBCD and BCI on a dry skull", april 2012.
74. Sabine Reinfeldt, **Bo Håkansson** et al: OM 2012, Amsterdam Holland, "A Novel Bone Conduction Implant (BCI) Device", Sept 2012.
75. Ortiz-Catalan, M., Håkansson, B., and Brånemark, R., Advanced prosthetic control through an osseointegrated bidirectional interface, Medicinteknikdagarna, Oct 1-2, 2013, Stockholm, Sweden.
76. **Bo Håkansson**, STAF March 2013, Invited talk
77. **Bo Håkansson**, HRF Falkenberg, March 2013, Invited talk
78. M. Ortiz-Catalan, **B. Håkansson**, and R. Brånemark, "Real-time classification of simultaneous hand and wrist motions using Artificial Neural Networks with variable threshold outputs," in Accepted in Proceedings of the XXXIV International Conference on Artificial Neural Networks (ICANN), 2013.
79. Osseo 2013, Newcastle, co-author in 8 peer reviewed abstracts – all accepted for oral presentation (Feb 2013).
80. **Bo Håkansson**, Biomaterials for tomorrow, Oct 2013, Chalmers, Gothenburg.
81. **Bo Håkansson**, A bone conduction implant with implanted transducer, Int journal of International Advanced Otolaryngology, vol 9, no 3, suppl 1, presented at 29 th Politzer meeting, Antalya, Turkey (Invited talk), 2013 .
82. **Bo Håkansson**, Måns Eeg Olofsson, *The Bone Conduction Implant*, Oticon Medical symposium, Jan 2014, Copenhagen.
83. **Bo Håkansson**, Karl-Johan Freden Jansson, *Framtidens hörapparater*, Vetenskapsfestivalen, maj 2014, Göteborg.
84. **Bo Håkansson**, *BAHA history*, Medicinteknikdagarna, October 2014, Gothenburg.
85. **Bo Håkansson**, *BCI development*, Medicinteknikdagarna October 2014, Gothenburg.

86. **Bo Håkansson**, *Framtidens benledningshörapparater*, HRF Malmö, årsmöte October 2014, Malmö.
87. **Osseo meeting 2015 Lake Louise Canada**: Invited talk, Oticon symposium + seven abstracts
88. **Bo Håkansson** Symposium, invited talk, iRSM, Edmonton 2015
89. **Bo Håkansson** Invited talk MedTechWest 2015
90. Ortiz-Catalan, M., Gudmundsdottir, R., Kristoffersen, M., Zepeda-Echavarria, A., **Håkansson, B.** and Brånemark, R., Promotion of Motor Execution via Myoelectric Pattern Recognition and Augmented/Virtual Reality as a Treatment of Phantom Limb Pain, 9th Congress of the European Federation of Pain (EFIC), Sep 2-5, 2015, Vienna, Austria.
91. **Bo Håkansson - Three invited talks 2016**: Promobilia Stockholm, HRF Hörselkonferensen, Linköping, MedTech West Göteborg.
92. Mastinu, E., Ortiz-Catalan, M., and **Håkansson, B.**, Digital Controller for Artificial Limbs fed by Implanted Neuromuscular Interfaces via Osseointegration, Proceedings of the 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, August 16-20, 2016, Orlando, Florida, U.S.A., 2016.
93. Mastinu, E., **Håkansson, B.**, and Ortiz-Catalan, M., _Digital Controller for Artificial Limbs fed by Implanted Neuromuscular Interfaces via Osseointegration, Proceedings of the Trent International Prosthetic Symposium, September 28-30, 2016, Glasgow, Scotland, U.K., 2016.
94. **Osseo 2017**, Nijmegen, six abstracts.
95. **Bo Håkansson - Six invited talks 2017**:
Oticon symposium Copenhagen; Cochlear symposium Stockholm; Gustav Dahlen seminar, Gothenburg; Oticon symposium Osseo 2018 Nijmegen; Edmonton seminar, Canada via Skype; Medtech West VEMP – MedTech4Health, Gothenburg.
96. STAF 2017: **Bo Håkansson** Yrselprojektet
97. Mastinu, E., **Håkansson, B.**, and Ortiz-Catalan, M., _Embedded Controller for Pattern Recognition and Neural Stimulation via Osseointegration, Proceedings of the 16th World Congress from the International Society for Prosthetics and Orthotics, May 8-11, 2017, Cape Town, South Africa, 2017.
98. M. Ortiz-Catalan, E. Mastinu, R. Brånemark, **B. Håkansson**, in XVI World Congress of the International Society for Prosthetics and Orthotics (ISPO), (Cape Town, 2017).
99. Mastinu E., **Håkansson B.**, and Ortiz-Catalan M., Low-cost, open source bioelectric signal acquisition system, 14th International Conference on Wearable and Implantable Body Sensor Networks, Eindhoven, May 9-12, 2017.
100. STAF 2018– 5 Abstracts; Barany XXX meeting 2018 – 2 abstracts;
101. IFMBE 2018 Otto Schmitt Award lecture
102. Invited lecture at Henry Wallman Award ceremony August 2018
103. Invited lecture Edmonton Canada, 25 years celebration, feb 2019
104. Invited lecture Rotary, Göteborg, Mars 2019
105. Poster presentation at ESPCI, Bukarest, Rumänien, Oct 2019.
106. Two presentations with peer review abstracts Osseo 2019, Miami.

4. Patents

I am first name in all patent families and patterns below. These patent families have been approved and modified in different countries, thus multiplied in numbers, but only the first and priority patent in these families are listed below which is typically in Sweden.

1.	Patent No: 81-07161-5	A coupling for bone conduction hearing aids	1981
2.	Patent No: 82-00702-2	A transient reduction device	1982
3.	Patent No: 85-02341-4	An implantable transducer	1985
4.	Patent No: 85-02426-3	A damped spring suspension	1985
5.	Patent No: 85-02411-5	Test equipment for direct bone conduction devices	1985
6.	Pattern No: 49086	Bayonet coupling	1992
7.	Pattern No: 950772	Sound suppression device- Earguard	1995
8.	Patent No: 95-850212-2	Snap coupling - flexible male element	1995
9.	Patent No: 94-04189-4	Snap coupling - release mechanism	1995
10.	Patent No: 97-02164-6	An integral implant system	1997
11.	Patent No: 97-04752-6	A percutaneous electrical coupling	1997
12.	Patent No: 0000810-2	An electromagnetic transducer (Vib I)	2000
13.	Patent No: 0201441-3	Arrangement in electromagnetic transducer (Vib II)	2002
14.	Patent No: 0600843-7	Assembly method electromagnetic transducer (Vib III)	2006
15.	Trademark No: 380722	BEST	2006
16.	Patent No: 0702894-7	Fitting of direct bone conduction devices	2007
17.	Patent No: 0800390-7	Implantable bone conduction transducer (Vib IV)	2008
18.	Patent No: 0900372-4	Mechanical HF boost (Vib V)	2009
19.	Patent No: 1001105-4	Electrical HF boost (Vib VI)	2010
20.	Patent No: 1000876-1	Miniaturized transducer (Vib VII)	2010
21.	Patent No: 1300529-3	Electric coupling	2013