

## Imran Khan Niazi

**Present Address:** 4/3C Harrison Road, Mt-Wellington, Auckland, New Zealand

**E-mail address:** [imrankn@hst.aau.dk](mailto:imrankn@hst.aau.dk) & [Imran.niazi@nzchiro.co.nz](mailto:Imran.niazi@nzchiro.co.nz)

### EDUCATION

Qualification	School/College/University	Year
PhD (Biomedical Science and engineering)	Aalborg University, Denmark	Apr- 2009 to Apr 2012
MSc Bio-Medical Engineering	University of Luebeck & Fachhochschule Luebeck, Germany	Sept-2006 to Feb 2009
B.S.C Electrical Engineering (Major: Bio-Medical).	Riphah international university Islamabad, Pakistan	Sept-2001 to Sept-2005 (Got Distinction)
B.Sc Physics, General Math, Statistics	Govt. Asghar Mall College, Rawalpindi “Punjab University”	1999 to 2001
F.Sc (Federal board) (HSSC)	P-O-F Science Degree College, WahCantt.	1996 to 1998
Metric (Lahore Board) (SSC)	Sir Syed High School, WahCantt.	1996

### Publications

#### JOURNAL

1. Detection of movement intention from single-trial movement-related cortical potentials. / [Niazi, Imran Khan](#) ; Jiang, Ning ; Tiberghien, Olivier ; Nielsen, Jørgen Feldbæk ; Dremstrup, Kim ; Farina, Dario. In: Journal of Neural Engineering, 2011. (Impact Factor: 3.837)
  2. Performance of a simulated adaptive BCI based on experimental classification of movement-related and error potentials. / Xavier Artusi, [Niazi, Imran Khan](#), Marie-Françoise Lucas, Dario Farina. In: IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2011.
  3. Peripheral electrical stimulation triggered by self-pace detection of motor intention enhances cortical excitability / [Niazi, Imran Khan](#); Mrachacz-Kersting, Natalie; Jiang, Ning; Dremstrup, Kim; Farina, Dario. In: Journal of IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2012. (Impact Factor: 2.4)
  4. Precise temporal association between cortical potentials evoked by motor imagination and afference induces cortical plasticity. / Mrachacz-Kersting, Natalie ; Kristensen, Signe Rom ; [Niazi, Imran Khan](#) ; Dremstrup, Kim ; Farina, Dario. In: Journal of Physiology, 2012. (Impact Factor: 5.139)
  5. Detection of movement related cortical potentials based on subject-independent training. / [Niazi, Imran Khan](#); Jiang, Ning; Jochumsen, Mads; Dremstrup, Kim; Farina, Dario. In: Medical & Biological Engineering & Computing, (E-pub ahead of print) (Impact Factor: 1.878)
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6. Detection and classification of movement-related cortical potentials for variations in speed and force for use in rehabilitation. / Jochumsen, Mads; [Niazi, Imran Khan](#); Mrachacz-Kersting, Natalie; Farina, Dario; Dremstrup, Kim .Accepted in Journal of Neural Engineering (Impact Factor: 3.837)
7. Efficient neuroplasticity induction in chronic stroke patients by an associative brain-computer interface. / Mrachacz- Kersting, Natalie; [Niazi, Imran Khan](#) ; Kostic, Vladimir ; Dremstrup, Kim ; Farina, Dario.(Submitted to Science Translational Medicine)
8. Changes in corticospinal excitability following the use of a BCI based protocol combined with sham visual feedback. / Kristensen, Signe Rom; [Niazi, Imran Khan](#); Jochumsen, Mads; Jiang, Ning; Farina, Dario; Mrachacz-Kersting, Natalie. .(Under preparation)
9. Neuroplastic changes followed by the Chiropractic care. / [Niazi, Imran Khan](#) ; Dremstrup, Kim ; Jochumsen, Mads; Sherwin, Diane; Flavel, Stanley; Farina, Dario. Haavik, Heidi (Under preparation)
10. Increased cortical drive and maximum voluntary contraction levels to the lower limb following spinal manipulation. / [Niazi, Imran Khan](#); Türker, Kemal; Flavel, Stanley; Kingett, Mat; Duehr, Jens; Haavik, Heidi (Under preparation)

## CONFERENCE

1. Increased cortical drive and altered net excitability of low-threshold motor unit levels to the lower limb following spinal manipulation. [Niazi, Imran Khan](#) , Türker Kemal, Flavel Stan, Kingett Matt, Duehr Jens & Haavik Heidi (2013) Platform presentation World Federation of Chiropractic's 12th Biennial Congress, April 6 – 9, Durban, South Africa. Proceedings p.155-156.
2. Increased upper limb cortical excitability following spinal manipulation. Haavik Heidi. [Niazi Imran Khan](#), Sherwin Diane & Flavel Stan. (2013). Platform presentation World Federation of Chiropractic's 12th Biennial Congress, April 6 – 9, Durban, South Africa. Proceedings p.147.
3. Increased lower limb cortical excitability and alterations to early Bereitschafts potential following spinal manipulation. [Niazi Imran Khan](#) & Haavik Heidi. (2013). Poster presentation World Federation of Chiropractic's 12th Biennial Congress, April 6 – 9, Durban, South Africa. Proceedings p.204-205.
4. **Detection of movement intentions in mixed paradigms of internally cued and non-cued movement-related cortical potentials.** / [Niazi, Imran Khan](#); Jochumsen, Mads; Farina, Dario; Dremstrup, Kim. 2013. Abstract from International IEEE EMBS Conference on Neural Engineering, San Diego, CA, United States.
5. Classifying speed and force from movement intentions using entropy and a support vector machine. / Jochumsen, Mads; [Niazi, Imran Khan](#); Farina, D.; Dremstrup, Kim. Proceedings of the Fifth International Brain-Computer Interface Meeting : Defining the Future, 3-7 June 2013, Pacific Grove, CA, USA. ed. / J. d. R. Millán; S. Gao; G. R. Müller-Putz; J. R. Wolpaw; J. E. Huggins. Verlag der Technischen Universität Graz, 2013. p. Article No. 136.
6. Changes in corticospinal excitability following the use of a BCI based protocol combined with sham visual feedback. / Kristensen, Signe Rom; [Niazi, Imran Khan](#); Jochumsen, Mads; Jiang, Ning; Farina, Dario; Mrachacz-Kersting, Natalie. In: Converging Clinical and Engineering Research on Neurorehabilitation: International Conference on NeuroRehabilitation, ICNR 2012, 14-16 November 2012, Toledo, Spain. ed. / José L. Pons; Diego Torricelli; Marta Pajaro. Vol. Part I Springer, 2013. p. 599-602 (Biosystems and Biorobotics, Vol. 1).
7. A novel brain-computer interface for chronic stroke patients. / Mrachacz-Kersting, Natalie; [Niazi, Imran Khan](#); Jiang, N.; Pavlovic, A. M.; Radovanovic, S.; Kostic, V.; Popovic, Dejan B.; Dremstrup, Kim; Farina, D. In: Converging Clinical and Engineering Research on Neurorehabilitation: International Conference on NeuroRehabilitation, ICNR 2012, 14-16 November 2012, Toledo, Spain. ed. / José L. Pons; Diego Torricelli; Marta Pajaro. Vol. Part II Springer, 2013. p. 837-841 (Biosystems and Biorobotics, Vol. 1).
8. Detection and classification of movement-related cortical potentials for variations in speed and force for use in rehabilitation. / Jochumsen, Mads; Mrachacz-Kersting, Natalie; [Niazi, Imran Khan](#); Farina, Dario; Dremstrup, Kim. In: 30. Danske Medicotekniske Landsmøde, 18.-20. september

- 2012, Brødstrup, Danmark. Dansk Medicoteknisk Selskab, 2012. p. 2, No. 4.
9. Lower limb cortical excitability changes and alterations to early Bereitschafts potential following spinal manipulation. / [Niazi, Imran Khan](#) ; Dremstrup, Kim ; Jochumsen, Mads ; Jörg Niemeier, Marko ; Jensen , Asger Ågård ; Van, Thien Duy ; Haavik, Heidi. In: Proceedings of the XIXth Congress of the International Society of Electrophysiology & Kinesiology, ISEK2012, 19-21 July 2012, Brisbane, Australia. ISEK, 2012. p. 245, No. SENS\_O2.2.
  10. Neuroplastic changes in upper limb cortical excitability following spinal manipulation. / Haavik, Heidi ; Sherwin, Diane ; Flavel, Stanley ; Dremstrup, Kim ; [Niazi, Imran Khan](#). In: Proceedings of the XIXth Congress of the International Society of Electrophysiology & Kinesiology, ISEK2012, 19-21 July 2012, Brisbane, Australia. ISEK, 2012. p. 248, No. SENS\_O3.1.
  11. LivBioSig: development of a toolbox for online bio-signals processing and experimentation. / Lorrain, Thomas ; [Niazi, Imran Khan](#) ; Thibergien, Olivier ; Jiang, Ning ; Farina, Dario. In: 2011 Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 30 August-3 September 2010, Boston, Massachusetts, USA. IEEE Press, 2011. p. 7302-7305 (IEEE Engineering in Medicine and Biology Society. Conference Proceedings).
  12. Motor imagination combined with peripheral stimulation increases cortical excitability. / Mrachacz-Kersting, Natalie ; Kristensen, Signe Rom ; [Niazi, Imran Khan](#) ; Dremstrup, Kim ; Farina, Dario. In: Proceedings Ninth Göttingen Meeting of the German Neuroscience Society and 33rd Göttingen Neurobiology Conference, 23-27 March 2011, Göttingen, Germany. Neurowissenschaftliche Gesellschaft, 2011. p. No. T21-11B.
  13. Movement onset detection in various positions for state-based myo-control scheme. / Lorrain, Thomas ; [Niazi, Imran Khan](#) ; Jiang, Ning ; Farina, Dario. In: Symposium Proceedings of the International Conference on Advanced Limb Prosthetics, MEC '11, 14-19 August 2011, Fredericton, Canada. University of New Brunswick, 2011. p. 237-239.
  14. Movement related cortical potentials : asynchronous versus synchronous brain computer interfaces. / Mrachacz-Kersting, Natalie ; [Niazi, Imran Khan](#) ; Farina, Dario. In: Clinical Neurophysiology, Vol. 122, No. Suppl. 1, 2011, p. S16, No. W5.3.
  15. Peripheral electrical stimulation triggered by movement related cortical potentials enhances cortical excitability. / Mrachacz-Kersting, Natalie ; Jiang, Ning ; [Niazi, Imran Khan](#) ; Farina, Dario. In: Bernstein Conference 2011, Computational Neuroscience / Neurotechnology and Neurex Annual Meeting, 4-6 October 2011, Freiburg, Germany. University of Freiburg, 2011. p. 155-156, No. W 22. Research - peer-review › Conference abstract in proceedings
  16. Theoretical framework and simulation of an adaptive BCI based on movement-related and error potentials. / Artusi, Xavier ; [Niazi, Imran Khan](#) ; Lucas, Marie F. ; Farina, Dario. In: Proceedings of the 5th International Brain-Computer Interface Conference, 22-24 September 2011, Graz, Austria. Verlag der Technischen Universität Graz, 2011. p. 88-91.
  17. Accuracy of a BCI based on movement-related and error potentials. / Artusi, Xavier ; [Niazi, Imran Khan](#) ; Lucas, Marie-Francoise ; Farina, Dario. In: 2011 Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 30 August-3 September 2010, Boston, Massachusetts, USA. IEEE Press, 2011. p.3688-3691(IEEE Engineering in Medicine and Biology Society. Conference Proceedings).Research - peer-review › Article in proceedings
  18. Self-paced vs. cue-based motor task: the difference in cortical activity./ Savic, Andrej M.; [Niazi, Imran Khan](#); Popovic, Mirjana. In: 19th Telecommunications Forum, TELFOR 2011, 22-24 November 2011, Belgrade, Serbia. IEEE Press, 2011. p. 39-42, Article No. 6143887.
  19. Changes in cortical excitability following the use of a BCI with abstract feedback. / [Niazi, Imran Khan](#) ; Jiang, Ning ; Lorrain, Thomas ; Cabrera, Alvaro Rodrigo ; Mrachacz-Kersting, Natalie ; Dremstrup, Kim ; Farina, Dario. 2010. Abstract from BCI International Meeting, Asilomar, CA, United States.
  20. Effect of abstract feedback following use of brain computer interface for upper limb rehabilitation. / [Niazi, Imran Khan](#) ; Jiang, Ning ; Mrachacz-Kersting, Natalie ; Dremstrup, Kim ; Farina, Dario. In: Abstracts of the XVIII Congress of the International Society of Electrophysiology and Kinesiology, ISEK 2010, 16-19 June 2010, Aalborg, Denmark [CD-ROM]. ed. / Deborah Falla ; Dario Farina. Aalborg : Department of Health Science and Technology. Aalborg University. , 2010.

21. Self-paced brain computer interface (SBCI) using movement related cortical potentials. Tiberghien, Olivier ; [Niazi, Imran Khan](#) ; Jiang, Ning ; Dremstrup, Kim ; Farina, Dario. In: 28. Danske Medicotekniske Landsmøde, 21.-23. september 2010, Brødstrup, Danmark. Dansk Medicoteknisk Selskab, 2010.

## Experience/Work

- **Research Fellow**  
**New Zealand College of Chiropractic (NZCC) Research center**  
April 2013 – till date
- **Research Associate at**  
**Aalborg University, Denmark** in collaboration with  
**Department of Neurorehabilitation Engineering,**  
**Bernstein Center for Computational Neuroscience,**  
**University Medical Center Göttingen, Germany**  
April 2013 – till date
- **Research Assistant Professor/Post Doc**  
**Aalborg University**  
April 2012 – April 2013
- **PhD Fellow**  
**Aalborg University, Denmark**  
April 2009 – April 2012 (3 years)  
Brain computer interfaces (BCI) for rehabilitation of stroke patients.  
Supervised by: Prof. Dr Dario Farina and Prof. Dr Kim Dremstrup
- **Visiting Research Scientist**  
**Department of Neurorehabilitation Engineering, Bernstein Center for Computational Neuroscience, University Medical Center Göttingen, Georg-August University**  
Feb 2011 – September 2012 (6 months) Göttingen  
Prof. Dr Dario Farina
- **Visiting Research Scientist**  
**Neurology Clinic, Clinical Center of Serbia Faculty of Medicine, University of Belgrade**  
October 2011 – February 2012 (5 months) Belgrade, Serbia  
Prof. Dr Vladimir kostic
- **Visiting Research Scientist**  
**New Zealand College of Chiropractic**  
September 2011 – April 2013 (1 year 8 months) Auckland, New Zealand  
Dr. Heidi Haavik.
- **Master thesis**  
**Klinikum University München**  
September 2007 – September 2008 (1 year 1 month)  
Prof. Dr Ulrich Hoffman
- **Teaching Assistant**  
**Riphah Int'l University, Islamabad**  
January 2006 – September 2006 (9 months)
- **Internee**  
**Zia-Ud-Din Medical University Hospital**  
July 2004 – September 2004 (3 months)

## Research Grants / Funding/Award:

- *Role: Participant*  
Farina D, Mrachacz-Kersting N, Dremstrup K and Feldæk Nielsen J. Enhancing the ability of re- learning motor tasks after stroke with brain-computer interface technology. **The Danish Agency for Science Technology and Innovation**, Awarded in 2009. ~5 Million DKK (~ 1 Million USD)
- Imran Khan Niazi, Research project: BCI for rehabilitation of stroke rehabilitation, Aalborg University,

- Awarded in 2009 **~1.5 Million DKK ( ~300,000 USD)**
- Imran Khan Niazi, Effects of chiropractic care on neural plasticity **OTTO MØNSTEDS FOND**  
Awarded in 2011, **DKK15000 (~3000 USD)**.
- Imran Khan Niazi, Conference participation(ISEK 2012) **OTTO MØNSTEDS FOND**  
Awarded in 2012, **DKK10000 (~2000 USD)**.
- Imran Khan Niazi, Conference participation(ISEK 2012) **OTTICON FONDEN**  
Awarded in 2012, **DKK4500. (~1000 USD)**
- Selected among top 10 research projects for BCI award 2012.  
68 top-level research projects were submitted from all over the world. The Award was presented at the "BCI party" at the SfN 2012 conference in New Orleans, USA.

### Teaching

- 2012-till date Supervision of Phd student (Mads Jochumsen)
- 2012-till date Supervision of approx. 16 Master students (7 Masters projects at Aalborg Uni)
- Feb-Sept, 2005 Teaching assistant at Riphah University. (Conducted CAD course)

### Volunteer experience

- Served two months in Muzaffarabad with Al-Khidmat trust as a volunteer to help the earth quake victims which enhanced my Team skills
- Served three weeks as volunteer with Bali memorial trust in Islamabad to set up a refugee camp through which I learned the structural way of working.

### Interest/spare time activities

Brain computer interface (BCI), Neuro-rehabilitation, Neurophysiology, Plasticity, Bio signal processing

### References

Will be furnished on request