

## 2. Use and dissemination of foreground

Throughout its execution, BRAIN published numerous scientific papers and disseminated its main results to the scientific community through conferences, workshops, and other events. Table 1 reports the list of scientific (peer reviewed) publications (journal papers, book chapters, theses and conference papers) that were published in BRAIN. The publication on the use of water-based electrodes received particular attention from the scientific community as this was among the [top ten articles in 2010](#) of the Journal of Neural Engineering (Impact factor: 2.628). The publication surveying the different stimulation methods in SSVEP based BCIs (Zhu 2010) was cited 30 times since publication in 2010.

Because of the opportunity for rapid dissemination, BRAIN channelled its results mainly through international conferences (24 conferences and 4 workshops) and two exhibitions (Hanover Fair 2010 and CeBIT 2011). The feedback from the research community was taken into account to progress further in the project. Five tutorial lectures were given at international conferences on the topic of EEG analysis for BCI (IJCNN 2011, EUSIPCO 2010, ISSPA 2010, ACII 2009, and BioCAS 2008). BRAIN scientific achievements were presented in detail during these events which allowed fresh and seasoned BCI researchers to incorporate BRAIN knowledge in their research.

## Section A (public)

TABLE 1: LIST OF SCIENTIFIC (PEER REVIEWED) PUBLICATIONS

No.	Title	Main author	Title of the periodical or the series	Number, date or frequency	Publisher	Place of publication	Year of publication	Relevant pages	Permanent Identifiers	Is/Will open access provided
1	BCI Demographics III: How Many (and What Kinds of) People Can Use a High-Frequency SSVEP BCI?	Volosyak	Transactions on Neural Systems and Rehabilitation Engineering	Vol. 19, n° 3, Jun 2011	IEEE	New York	2011	pp. 232-239	DOI: 10.1109/TNSRE.2011.2121919	No
2	Brain-computer Interface Using water based Electrodes	Volosyak	Journal of Neural Engineering	Vol. 7, n° 6, Dec 2010	IOP Publishing		2010	pp. 1-8	DOI: 10.1088/1741-2560/7/6/066007	No
3	A Survey of Stimulation Methods Used in SSVEP-based BCIs	Zhu	Computational Intelligence and Neuroscience	Vol. 2010	Hindawi Publishing Corporation		2010	pp. 1-12	DOI: 10.1155/2010/702357	Yes
4	Spatial Filters to Detect Steady State Visual Evoked Potentials Elicited by High Frequency Stimulation: BCI application	Garcia-Molina	Biomedizinische Technik / Biomedical Engineering	Vol. 55, n° 3, Apr 2010	De Gruyter		2010	pp. 173-182	DOI: 10.1515/bmt.2010.013	No
5	An SSVEP based Brain-Computer Interface for the Control of Functional Electrical Stimulation	Gollee	Transactions on Biomedical Engineering	Vol. 57, n° 8, Aug 2010	IEEE	New York	2010	pp. 1847-1855	DOI: 10.1109/TBME.2010.2043432	No
6	User-centered Design of Brain-computer Interfac-	Durka	Bulletin of the Polish Academy of	2012	Polish Academy	Warsaw	2012			Yes

	es: OpenBCI.pl and BCI Appliance		Sciences: Technical Sciences		of Sciences					
7	Phase Detection of Visual Evoked Potentials Applied to Brain Computer Interfacing	Garcia-Molina	Future Brain Neural Computer Interface	2012	Springer-Verlag	Berlin Heidelberg	2012			No
8	Towards Standardized User and Application Interfaces for the Brain Computer Interface	McCullagh	Universal Access in HCI, Part II	Vol. 6766, 2011	Springer-Verlag	Berlin Heidelberg	2011	pp. 573-582	DOI: 10.1007/978-3-642-21663-3_62	No
9	Online BCI Implementation of High-frequency Phase Modulated Visual Stimuli	Zhu	Universal Access in HCI, Part II	Vol. 6766, 2011	Springer-Verlag	Berlin Heidelberg	2011	pp. 645-654	DOI: 10.1007/978-3-642-21663-3_70	No
10	Can Brain Computer Interfaces Become Practical Assistive Devices in the Community?	McCullagh	MEDINFO 2010 Proc. of the 13th World Congress on Medical Informatics	Vol. 160, 2010	IOS Press	Amsterdam	2010	pp. 314-318	DOI: 10.3233/978-1-60750-588-4-314	No
11	Voices from the Interface	McCullagh	Workshop Proc. of the 6th Int. Conf. on Intelligent Environments	Vol. 8, 2010	IOS Press	Amsterdam	2010	pp. 251-260	DOI: 10.3233/978-1-60750-639-3-251	No
12	Toward a BCI Wizard	Ehlers	Methods and Applications in Automation	Series 1, n° 3, 2010	Shaker Verlag	Aachen	2010	pp. 65-73		No
13	Effectiveness of Training in SSVEP-based BCIs	Valbuena	Methods and Applications in Automation	Series 1, n° 3, 2010	Shaker Verlag	Aachen	2010	pp. 74-83		No
14	The I of BCIs: Next Generation Interfaces for Brain-Computer Interface Systems That Adapt to Indi-	Allison	Human-Computer Interaction, Part II	Vol. 5611, 2009	Springer-Verlag	Berlin Heidelberg	2009	pp. 558-568	DOI: 10.1007/978-3-642-02577-8_61	No

	vidual Users									
15	Practical Brain Computer Interfacing	Valbuena	Dissertation/ Habilitation	Jul 2011	Staats- und Universität sbibliothek Bremen	Bremen	2011	pp. 1 -184	URN: urn:nbn:de:gbv:46-00102068-10	Yes
16	To What Extend Can Dry and Water-based EEG Electrodes Replace Conductive Gel Ones? A Steady State Visual Evoked Potential Brain-Computer Interface Case Study	Mihajlovic	Proc. of the 5 <sup>th</sup> Int. Joint Conf. on Biomedical Engineering System and Technologies (BIOSTEC 2012)	Feb 2012	Scite Press		2012			Yes
17	Dynamics of the Alpha Peak Frequency During Flicker Stimulation	Garcia-Molina	European Signal Processing Conference	Aug 2011	EURASIP Open Library		2011	pp. 1549-1553		Yes
18	Optimal Spatial Filtering for the Steady State Visual Evoked Potential: BCI application	Garcia-Molina	2011 5 <sup>th</sup> Int. IEEE/EMBS Conf. on Neural Engineering (NER)	Apr 2011	IEEE		2011	pp. 156-160	DOI: 10.1109/NER.2011.5910512	No
19	Contrasting Levels of Accuracy in Command Interaction Sequences for a Domestic Brain-Computer Interface Using SSVEP	Ware	2010 5 <sup>th</sup> Cairo International Biomedical Engineering Conference (CIBEC)	Dec 2010	IEEE		2010	pp. 150-153	DOI: 10.1109/CIBEC.2010.5716040	No
20	Assessing the Accessibility of a Domestic Brain Computer Interface and the Implications for Future Design Choices	Ware	2010 10 <sup>th</sup> IEEE Int. Conf. on Information Technology and Applications in Biomedicine (ITAB)	Nov 2010	IEEE		2010	pp. 1-5	DOI: 10.1109/ITAB.2010.5687690	No
21	Interfacing with Brain Computer Interfaces	Mulvenna	Recent Advances in Assistive Tech-	Nov 2010			2010	pp. 1-5		No

			nology & Engineering (RAatE 2010)							
22	Toward BCI Wizard - Best BCI Approach for Each User	Volosyak	2010 Annual Int. Conf. of the IEEE Engineering in Medicine and Biology Society (EMBC)	Aug 2010	IEEE		2010	pp. 4201-4204	DOI: 10.1109/IEMBS.2010.5627390	No
23	sBCI: Fast Detection of Steady-state Visual Evoked Potentials	Valbuena	2010 Annual Int. Conf. of the IEEE Engineering in Medicine and Biology Society (EMBC)	Aug 2010	IEEE		2010	pp. 3966-3969	DOI: 10.1109/IEMBS.2010.5627990	No
24	Phase Detection in a Visual-Evoked-Potential based Brain Computer Interface	Garcia-Molina	European Signal Processing Conference	Aug 2010	EURASIP Open Library		2010	pp. 949-953		Yes
25	A Novel Calibration Method for SSVEP based Brain-Computer Interfaces	Volosyak	European Signal Processing Conference	Aug 2010	EURASIP Open Library		2010	pp. 919-923		Yes
26	Reliable Visual Stimuli on LCD Screens for SSVEP based BCI	Cecotti	European Signal Processing Conference	Aug 2010	EURASIP Open Library		2010	pp. 939-943		Yes
27	Phase Synchrony Analysis for SSVEP-based BCIs	Zhu	2010 2 <sup>nd</sup> Int. Conf. on Computer Engineering and Technology (IC-CET)	Vol. 2, Apr 2010	IEEE		2010	pp. 329-333	DOI: 10.1109/ICCET.2010.5485465	No
28	Brain Computer Interfaces for Inclusion	McCullagh	Proc. of the 1st Augmented Human Int. Conf.	Apr 2010	ACM	New York	2010	pp. 1-8	DOI: 10.1145/1785455.1785461	No
29	A User Centred Approach	Lightbody	2010 4th Int.	Mar 2010	IEEE		2010	pp. 1-8	DOI:	No

	for Developing Brain-Computer Interfaces		Conf. on Pervasive Computing Technologies for Healthcare: Pervasive Health 2010						10.4108/ICST.PERVASIVEHEALTH2010.8888	
30	Steady-State Visual Evoked Potential Response - Impact of the Time Segment Length	Volosyak	Biomedical Engineering (BioMed 2010)	Vol. 1, Feb 2010	ACTA Press		2010	pp. 284-288		No
31	Emotional Brain-computer Interfaces	Garcia-Molina	2009 3 <sup>rd</sup> Int. Conf. on Affective Computing and Intelligent Interaction and Workshops, ACII	Vol. 1, Sept 2009	IEEE		2009	pp. 1-9	DOI: 10.1109/ACII.2009.5349478	No
32	ERD/ERS BCI Training on the Basis of a Labyrinth Application	Malechka	International Journal of Bioelectromagnetism	Vol. 13, n° 2, 2011	IJBEM		2011	pp. 68-69		Yes
33	Temporal and Representational Complexity in the Semantics of a Brain-Computer Interface	Ware	International Journal of Bioelectromagnetism	Vol. 13, n° 1, 2011	IJBEM		2011	pp. 36-38		Yes
34	A Novel EEG Acquisition System for Brain Computer Interfaces	Valbuena	International Journal of Bioelectromagnetism	Vol. 13, n° 2, 2011	IJBEM		2011	pp. 74-75		Yes

TABLE 2: LIST OF DISSEMINATION ACTIVITIES

No.	Type of activities	Main leader	Title	Date	Place	Type of audience	Countries addressed
1	Conference	Philips	5 <sup>th</sup> International Joint Conference on Biomedical Engineering System and Technologies (BIOSTEC 2012)	01/02/2012 – 04/02/2012	Vilamoura, Portugal	Scientific Community (higher education, Research)	International
2	Conference	Philips	13th Winter Conference of the Dutch Psychonomic Society (NVP)	16/12/2011 – 17/12/2011	Egmond aan Zee, The Netherlands	Scientific Community (higher education, Research)	Netherlands
3	Workshop	Uni-HB	33 <sup>rd</sup> IAT Colloquium of Automation	04/10/2011 – 05/10/2012	Leer, Germany	Scientific Community (higher education, Research)	Germany
4	Conference	Philips, Uni-HB	19 <sup>th</sup> European Signal Processing Conference (EU-SIPCO 2011)	29/08/2011 – 02/09/2011	Barcelona, Spain	Scientific Community (higher education, Research)	International
5	Conference	Philips	International Joint Conference on Neural Networks (IJCNN 2011)	31/07/2011 – 05/08/2011	San Jose, USA	Scientific Community (higher education, Research)	International
6	Conference	UW	8 <sup>th</sup> Annual Meeting of the Society for Autonomous Neurodynamics (SAND)	18/07/2011 – 20/07/2011	Bangkok, Thailand	Scientific Community (higher education, Research)	International
7	Conference	UU, Philips	14th International Conference on Human-Computer Interaction (HCI 2011)	09/07/2011 – 14/07/2011	Orlando, USA	Scientific Community (higher education, Research)	International
8	Conference	Philips	5 <sup>th</sup> International IEEE EMBS Conference on Neural Engineering (NER 2011)	27/04/2011 – 01/05/ 2011	Cancun, Mexico	Scientific Community (higher education, Research)	International
9	Exhibition	Uni-HB	CeBIT 2011	01/03/2011 – 05/03/2011	Hanover, Germany	Scientific Community (higher education, Research)	International
10	Conference	UU	5 <sup>th</sup> Cairo International Biomedical Engineering Conference (CIBEC)	16/12/2010 – 18/12/2010	Cairo, Egypt	Scientific Community (higher education, Research)	International
11	Workshop	Uni-HB	TOBI Workshop II	02/12/2010 – 03/12/2010	Rome, Italy	Scientific Community (higher education, Research)	International
12	Conference	UU	10 <sup>th</sup> IEEE Int. Conf. on Information Technology and Applications in Biomedicine (ITAB)	03/11/2010 – 05/11/2010	Corfu, USA	Scientific Community (higher education, Research)	International
13	Conference	UU	Recent Advances in Assistive Technology & Engineering (RAatE 2010)	29/10/2010	Coventry, UK	Scientific Community (higher education, Research)	International
14	Conference	Uni-HB	32nd Annual International Conference of the IEEE	31/08/2010 –	Buenos Aires, Ar-	Scientific Community	International

			EMBS	04/09/ 2010	gentina	(higher education, Research)	
15	Conference	UU	Northern Ireland Biomedical Engineering Society (NIBES 2010)	25/08/2010 – 27/08/2010	Belfast, UK	Scientific Community (higher education, Research)	Northern Ireland
16	Conference	Philips, Uni-HB	18 <sup>th</sup> European Signal Processing Conference (EU-SIPCO 2010)	23/08/2010 – 27/08/2010	Aalborg, Denmark	Scientific Community (higher education, Research)	International
17	Conference	UU	6th International Conference on Intelligent Environments	18/07/2010 – 19/07/2010	Kuala Lumpur, Malaysia	Scientific Community (higher education, Research)	International
18	Conference	Uni-HB, Philips, UU	4 <sup>th</sup> International BCI Meeting	31/05/2010 – 04/06/2010	Asilomar, USA	Scientific Community (higher education, Research)	International
19	Conference	CEDAR	International Society for Gerontechnology 7 <sup>th</sup> World Conference	27/05/2010 – 30/05/2010	Vancouver, Canada	Scientific Community (higher education, Research)	International
20	Conference	Philips	10 <sup>th</sup> International Conference on Information Science, Signal Processing and their Applications (ISSPA 2010)	10/05/2010 – 13/05/2010	Kuala Lumpur, Malaysia	Scientific Community (higher education, Research)	International
21	Exhibition	Uni-HB	Hanover Fair	19/04/2010 – 23/04/2010	Hanover, Germany	Industry, Civil Society, Medias	International
22	Conference	Philips	2 <sup>nd</sup> International Conference on Computer Engineering and Technology (ICCET 2010)	16/04/2010 – 18/04/2010	Chengdu, China	Scientific Community (higher education, Research)	International
23	Conference	UU	1 <sup>st</sup> Augmented Human International Conference (AH'10)	02/04/2010 – 04/04/2010	Megève, France	Scientific Community (higher education, Research)	International
24	Conference	UU	4th Int. Conf. on Pervasive Computing Technologies for Healthcare (Pervasive Health 2010)	22/03/2010 – 25/03/2010	Munich, Germany	Scientific Community (higher education, Research)	International
25	Conference	Uni-HB	7 <sup>th</sup> IASTED International Conference Biomedical Engineering (BioMED 2010)	17/02/2010 – 19/02/2010	Innsbruck, Austria	Scientific Community (higher education, Research)	International
26	Workshop	Uni-HB, Philips, UU	TOBI Workshop I	03/02/2010 – 04/02/2010	Graz, Austria	Scientific Community (higher education, Research)	International
27	Conference	Philips	3 <sup>rd</sup> International Conference on Affective Computing and Intelligent Interaction and Workshops (ACII)	10/09/2009 – 12/09/2009	Amsterdam, the Netherlands	Scientific Community (higher education, Research)	International
28	Workshop	Philips	NeuroMath Workshop 2009	12/03/2009 – 13/03/2009	Leuven, Belgium	Scientific Community (higher education, Research)	International

29	Conference	UW	2nd INCF Congress of Neuroinformatics	06/09/2009 – 08/09/2009	Pilsen, Czech Republic	Scientific Community (higher education, Research)	International
30	Conference	Philips	IEEE Biomedical Circuits and Systems Conference, BioCAS 2008	20/11/2008 – 22/10/2008	Baltimore, MD	Scientific Community (higher education, Research)	International
31	Publication	Uni-HB	Towards an SSVEP based BCI with High ITR	24/06/2011	Bremen, Germany	Scientific Community (higher education, Research)	International