ENGINE Centre, Wrocław University of Technology
Wyb. Wyspiańskiego 27, building A1, room 203k
50-370 Wrocław, Poland
tel.: +48 71 320 3453, email: engine@pwr.wroc.pl

WT2.9: University of Bradford, Bradford, Great Britain (UBRA)

Report

Activities performed during the visit

in University of Bradford, Bradford, Great Britain (UBRA)

period: ..23.01.2016..... -...08.02.2016.....

author: …Martin Tabakow……

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 316097 [ENGINE].

ENGINE Centre, Wrocław University of Technology
Wyb. Wyspiańskiego 27, building A1, room 203k
50-370 Wrocław, Poland
tel.: +48 71 320 3453, email: engine@pwr.wroc.pl

Personal Information

Mr./Ms. ……Martin Tabakow……., faculty member of ……
Wroclaw University of Technology, Poland ……. visited
(name of sending institution, country)

…… University of Bradford, Bradford (UK), School of Electrical Engineering and Computer Science ……. in the period from …23.01.2016……. to ……08.02.2016……. in

(name of the visited institution, country)

order to carry out research and training activities in the field of…Bioinformatics (exploration and analysis of medical data)…….

(*give the area)*

Information about Seminars

The seminar presentation was organized on …… Thursday (26.01.2016)…….

the date

It was entitled:

Discussion about 'Bionic Arm' Technologies

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 316097 [ENGINE].

ENGINE Centre, Wrocław University of Technology
Wyb. Wyspiańskiego 27, building A1, room 203k
50-370 Wrocław, Poland
tel.: +48 71 320 3453, email: engine@pwr.wroc.pl

Description of scientific activities

(Please describe value added to the ENGINE project i.e. new knowledge, new skills with respect to the objectives of the project, the assigned common area of future cooperation with the partner, plans for common research, projects, publications and how it could be used in the scope of ENGINE)

The main objective of the visit was to perform common research on data achieved from patients with amputees regarding to the specifics of the 'bionic arm' development.

The visit was finalised with the preparation of a scientific article, entitled:

'*Initial Proposal of Fuzzy Bionic Hand Control in Real-Time based on Electromyography Signal Analysis*'

Abstract:

This research is aimed to illustrate a proposal of applying fuzzy model for control of bionic hand in real-time. The control process involves corresponding interpretation and analysis of surface electromyography signal (sEMG) acquired from patients with amputees. Our proposal considers the use of force sensing resistor for better control of the artificial hand as well. The conducted experiments show expected results with respect to applied assumptions, which give the possibility to implement the proposed concept into real-time control process. In our research we used the classical type-1 Mamdani fuzzy control model.

Key words: fuzzy control, Mamdani model, bionic limbs, electromyography, signal analysis

Additionally, we discussed the opportunities to start with a Horizon 2020 on the basis of the performed research.

The achieved results give a completely new possibilities for development of bionic prosthetic limbs.

……

Information referring to the intellectual property

(the generally binding low in this area in the visited country and procedures of patenting);

……

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 316097 [ENGINE].

ENGINE Centre, Wrocław University of Technology
Wyb. Wyspiańskiego 27, building A1, room 203k
50-370 Wrocław, Poland
tel.: +48 71 320 3453, email: engine@pwr.wroc.pl

Description of the cooperation between universities and industry

(how it is organized in partner's organization, the sources of funding, the opinions about drawbacks and strengths of existing solution).

.....

Other activities

.....

REMARK: Apart from this information also a program of the visit and the presentation in electronic version should be given to the project office (please send all of them to Urszula.Markowska-Kaczmar@pwr.wroc.pl). Please respond to the points 1-5 for outgoing visit and points 1-3 for incoming visit. Point 6 is for extra activities that are not put in points 1-5.

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 316097 [ENGINE].