

# Gábor Orbán

ELECTRICAL ENGINEER

25 July, 1991

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## Educational attainment

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### Doctor of Philosophy (PhD)

*Budapest, Hungary*

ÓBUDA UNIVERSITY, DOCTORAL SCHOOL ON MATERIALS SCIENCES AND TECHNOLOGIES

*Feb. 2017 - In progress*

- Development of polymer based biosensors
- Development of novel measuring methods in the field of neuroscience and dentistry

### Electrical Engineer (MSc)

*Budapest, Hungary*

BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS, FACULTY OF ELECTRICAL ENGINEERING AND INFORMATICS

*Feb. 2015 - Jan. 2017*

- Specialization of Microelectronics and Electronics Technology
- Subspecialization of Smart System Integration

### Electrical Engineer (BSc)

*Budapest, Hungary*

BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS, FACULTY OF ELECTRICAL ENGINEERING AND INFORMATICS

*Sep. 2010 - Jan. 2015*

- Specialization of Microelectronics

## Hard skills

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**Engineering software** CorelDRAW, Matlab, Autodesk Inventor,  $\LaTeX$ , MS Office, COMSOL Multiphysics

**Language skills** Hungarian (native), English (fluent), German (basic)

## Professional experience

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### PhD student

*Budapest, Hungary*

HUNGARIAN ACADEMY OF SCIENCES, RESEARCH CENTRE FOR NATURAL SCIENCES, INSTITUTE OF COGNITIVE

*Feb. 2017 - In progress*

NEUROSCIENCE AND PSYCHOLOGY

- development of measuring methods in the field of neuroscience
- two-photon microscopy
- electrophysiology
- noise filtering
- *in vitro* and *in vivo* animal experiments

### Research assistant

*Budapest, Hungary*

SEMMELWEIS UNIVERSITY, FACULTY OF DENTISTRY, THE DEPARTMENT OF ORAL DIAGNOSTICS

*Nov. 2015 - In progress*

- applied biomedical research
- realization of brand-new dentin recording method
- designing of dental measuring system

### Professional trainee

*Budapest, Hungary*

HUNGARIAN ACADEMY OF SCIENCES, RESEARCH CENTRE FOR NATURAL SCIENCES, INSTITUTE OF COGNITIVE

*Summer of 2016*

NEUROSCIENCE AND PSYCHOLOGY

- design of 3D measuring system
- simulation based on finite element method
- biomedical research

## Professional trainee

Budapest, Hungary

HUNGARIAN ACADEMY OF SCIENCES, RESEARCH CENTRE FOR NATURAL SCIENCES, INSTITUTE OF TECHNICAL PHYSICS AND MATERIALS SCIENCE

Summer of 2013

- designing of microelectrode systems for neuroscience
- utilization of polymer based MEMS technology
- LAYOUT design
- clean room processes
- *in vitro* and *in vivo* animal experiments

## Honors & Awards

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### New National Excellence Program of the Ministry of Human Capacities

AWARDED

2019-2020

- Dosctoral student scholarship at the Óbuda University
- Field of research: Simultaneous electrophysiological recording and two-photon imaging

### New National Excellence Program of the Ministry of Human Capacities

AWARDED

2018-2019

- Dosctoral student scholarship at the Óbuda University
- Field of research: Simultaneous electrophysiological recording and two-photon imaging

### Hungarian National Scientific Students' Associations Conference

SPECIAL AWARD

2015

- ÓBUDA UNIVERSITY, Section of Technical Sciences
- Field of research: Development of polymer-based flexible microelectrode system

### Scientific Students' Associations Conference

1ST PRICE

2014

- BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS, Faculty of Electrical Engineering and Informatics
- Field of research: Development of polymer-based flexible microelectrode system

### Scientific Students' Associations Conference

PRO PROGRESSIO FOUNDATION SPECIAL AWARD

2014

- BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS, Faculty of Electrical Engineering and Informatics
- Field of research: Development of polymer-based flexible microelectrode system

## Publication list

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### Method for spike detection from microelectrode array recordings contaminated by artifacts of simultaneous two-photon imaging

PLoS ONE 14(8): E0221510. DOI:10.1371/JOURNAL.PONE.0221510

2019

Orbán, Gábor; Meszéna, Domokos; Tasnády, Kinga Réka; Rózsa, Balázs; Ulbert, István; Márton, Gergely

### A softening laminar electrode for recording single unit activity from the rat hippocampus

SCIENTIFIC REPORTS 2321 9(1) DOI:10.1038/s41598-019-39835-6

2019

Zátonyi, Anita; Orbán, Gábor; Modi, Romil; Márton, Gergely; Meszéna, Domokos; Ulbert, István; Pongrácz, Anita; Ecker, Melanie; Voit, Walter E.; Joshi-Imre, Alexandra; Zoltán, Fekete

### A silicon-based spiky probe providing improved cell accessibility during *in vitro* slice recordings

SENSORS AND ACTUATORS B: CHEMICAL 297(15) 2019, 126649, DOI:10.1016/J.SNB.2019.126649

2019

Meszéna, Domokos; Kerekes, Bálint Péter; Pál, Ildikó; Orbán, Gábor; Fiáth, Richárd; Holczhammer, Tobias; Ruther, Patrick; Ulbert, István; Márton, Gergely

**A Multimodal, SU-8 - Platinum - Polyimide Microelectrode Array for Chronic In Vivo Neurophysiology**

PLoS ONE 10(12): E0145307. DOI:10.1371/JOURNAL.PONE.0145307

2015

Márton, Gergely; Orbán, Gábor; Kiss, Marcell; Fiáth, Richárd; Pongrácz, Anita; Ulbert, István

**A polymer-based spiky microelectrode array for electrocorticography**

MICROSYST TECHNOL (2015) 21(3): 619. DOI:10.1007/S00542-014-2203-Y

2015

Márton, Gergely; Kiss, Marcell; Orbán, Gábor; Pongrácz, Anita; Ulbert, István

**A Novel Polyimide – Platinum – SU-8 Microelectrode Array for Various Electrophysiological Applications**

PROEDIA ENGINEERING 87: PP. 380-383. (2014) DOI:10.1016/J.PROENG.2014.11.735

2014

Márton, Gergely; Kiss, Marcell; Orbán, Gábor; Pongrácz, Anita; Ulbert, István