



RGI NEWS

Volume 1. No 3. 04.05.1994

Ragnar Granit Institute, P.O.Box 692, FIN-33101 Tampere, Finland
Editor: Jaakko Malmivuo, www.rgi.fi/persons/malmivuo/, ISSN: 1456-4343

Assistant of Biomedical Engineering

The post of Assistant of Biomedical Engineering is open for application. The post will be appointed for a term of five years starting on the 1st of August, 1994. The deadline for the applications is the 17th of May, 1994. For more information please contact Professor Jaakko Malmivuo.

Visitors at the Ragnar Granit Institute

His Excellency, Ambassador of Italy, Mr. Ramiero Avogadro visited The Ragnar Granit Institute on Thursday, on the 21th of April. The Ambassador was accompanied by The Italian Consul, Mr. Olli Kivekäs, and Rector Timo Lepistö.

Professor Jaakko Malmivuo hosted the visit and informed His Excellency on the research and education of the Institute. His Excellency also had the opportunity to see several research projects of the Institute.

Doctoral Dissertation of Ilpo Rimpiläinen

Lich. Med. Ilpo Rimpiläinen's doctoral dissertation will take place on Friday, the 13th of May, at 12 o'clock noon in the small auditorium, at The Department of Clinical Sciences, The University of Tampere (in connection with University Hospital). The dissertation is a public occasion and everyone is welcome to attend it. Ilpo Rimpiläinen has specialized in clinical neurophysiology mainly in The University Hospital of Tampere, but has also worked in various other central hospitals in Finland and Sweden, and currently at the Karolinska Hospital in Stockholm. His thesis is part of The Ragnar Granit Institute's project: "Electro magnetic stimulation of central nervous system". In this project he has worked several periods as a researcher in the Institute by studying the stimulation of facial nerves. His thesis consists of an introduction and five publications in reputed medical journals.

As the opponent will serve John Rothwell, Ph.D., who is with M.R.C. Human Movement and Balance Unit, London. He was one of the first to apply the magnetic stimulation technique (since Ph.D. Anthony Barker brought this method to London in 1985) and has been very productive in this field. Most of his papers have been published in journals of neurology and clinical neurophysiology. Dr Rothwell arrives in Tampere on May 11th, Wednesday afternoon. Because the next day happens to be a holiday, he will not give any public lecture, but will visit the Institute during his stay.

The doctoral dissertation of Ilpo Rimpiläinen is the second Doctor of Medicine dissertation in the projects of the Ragnar Granit Institute and financed by the Institute. The first one was the dissertation of Sakari Oja in September 1993. That dissertation concerned on magneto cardiography.

Hannu Eskola



Research Projects at The Ragnar Granit Institute: 2. Magnetic Stimulation of the Facial Nerve.

In 1985 a project was started at the Ragnar Granit Institute on the design of a magnetic stimulation device. That was designed in 1986 by Mr. Risto Rossi. In 1988 the project was continued at the Ragnar Granit Institute and the University Hospital of Tampere with the clinical phase under the title: "Electric and magnetic stimulation of the central nervous system". From the very beginning the project covered both the technical development (construction of devices and evaluation of stimulation fields) and the potential clinical applications.

Lich. Med. Ilpo Rimpiläinen began the stimulation studies of facial nerves in 1989, together with a group of various specialists of otolaryngology, neurosurgery and neuro physiology. The promising results of the preliminary experiments encouraged him to choose this as the subject of his thesis, under the guidance of docents Veikko

Häkkinen, M.D. and Hannu Eskola, Ph.D. The experimental research was supported by the extensive technical knowledge of electromagnetic stimulation in The Ragnar Granit Institute. During the following five years, more than 50 papers were published within the project, from which eight are full papers in reputed medical journals.. Ilpo Rimpiläinen first studied the use of magnetic stimulation for diagnosis of Bell's facial palsy (kasvohermoalvaus in Finnish). It appeared that during the first four days of palsy magnetic stimulation serves a reliable prognosis for the patient, whereas the conventional electric surface stimulation is applicable after five days from the onset of the palsy.

In scientific medical journals many opinions were given as to the site of excitation in the facial nerve when stimulated magnetically. For this purpose Ilpo Rimpiläinen performed experiments in the operating theater, where the facial nerve was stimulated intracranially by direct electric stimulation and succeeded in locating the site of excitation to the internal acoustic meatus.

The last section of the thesis deals with classifying the responses to magnetic stimulation of facial nerves into three categories. The groups differ both by latencies and lateralization. In a publication by Rimpiläinen (accepted to EEG Journal) the concept of long latency responses is introduced, as well as a theory for their origin. This determination was based on using both magnetic and electric transcranial stimulators.

Hannu Eskola

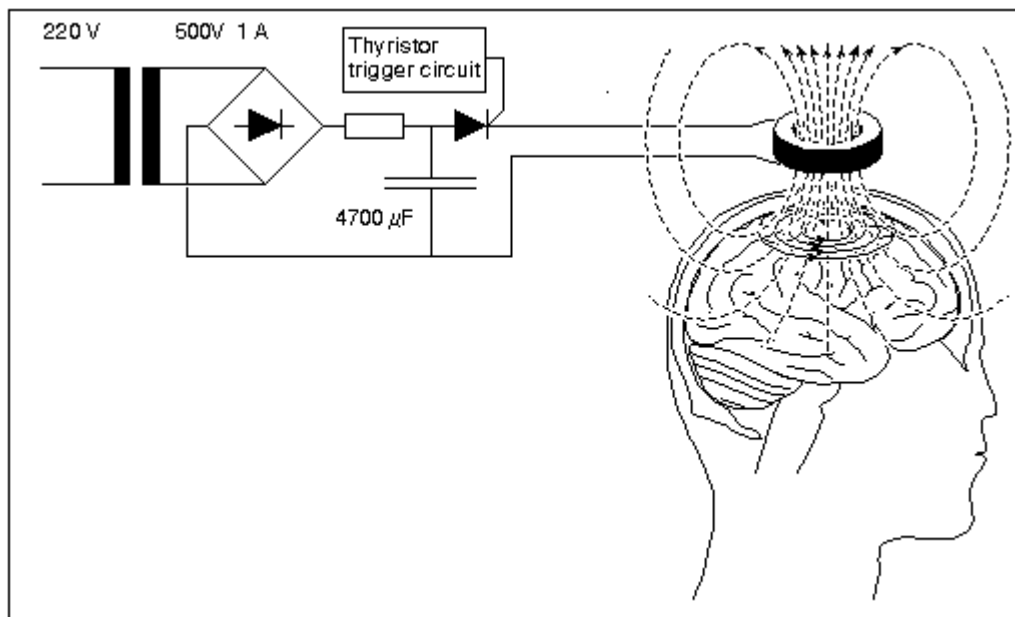


Figure 1. Principle of magnetic stimulation.



[Back to the Index](#)



[Ragnar Granit Institute](#)