PROGRAM BOOK

WC 2006

WC 2006

World Congress on Medical Physics and Biomedical Engineering

Aug. 27 - Sep. 1, 2006 COEX Seoul, Korea

"Imaging the Future Medicine"

The Triennial World Congress of IUPESM
The 15th ICMP of IOMP
The 21st ICMBE of IFMBE

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T22 Poster Session (continued) Exhibition Hall

Presenting Time: 09:30 - 10:00 / 14:10 - 14:40

5029. Electrical Performance of Cold Sputtered Iridium Oxide Films for Neural Stimulation Electrodes
Shin Ae Kim, Eui Tae Kim, Sung June Kim

5030. Treatment and Mechanism Study of Electromagnetic Stimulation and Vibrational Massage for Patients with Ejaculatory Incompetence
Guomao Zhang

5031. The Development of Rehabilitation-Assisting System based on Brain-Computer Interface (BCI) for Hemiplegia Patient
Peng Zhou, Shuang Zhang, Ya Wang, Chao Yu, Jiayi Ge, Mingshi Wang

5032. The Behavior of the Complex-Value Neural Network on Spikes and Eye-Blinks Detection in EEG Signal
Fernando de Azevedo, Sheila Travessa, Fernanda Isabel Argoud

5033. Research of TMS Induced Human Pleasure
Huisheng Lu, Mingshi Wang, Ning Li, Yun Chen, Hongqiang Yu, Peng Zhou

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T23 Poster Session Exhibition Hall

Presenting Time: 09:30 - 10:00 / 14:10 - 14:40

5137. Electrical Property Measurement from acupoints and Meridian in Human
YeonHee Ryu, Sung Tae Koo, Sang Yong Jeong, Kyuseok Ahn, Sunmi Choi

5118. Change of Heart Rate Variability by Electro-Acupuncture Stimulus in Rats
Yunjin Kim, Jungdae Kim, Zhongren Li, Yeonkwang Kim, Kwangsup Soh

5119. Hidden Corpuscular Structures Floating inside Blood Vessels of Mammalians
Byung-Cheon Lee, Jung Sun Yoo, Ku Youn Baik, Eun-sung Park, Yeo-Sung Yoon, Kwang-Sup Soh

5120. Forced and Non-forced Chinese Meditation Studies
Chien-Hui Liou, Chang-Wei Hsieh, Chao-Hsien Hsieh, Chi-Hong Wang, Si-Chen Lee, Jyh-Horng Chen

5121. Effect of the BUDDEUMI Therapy on the Relief of Premenstrual Syndrome and Dysmenorrhea in Female College Students
Yi-Soon Kim, Ja-Youn Gwon, Gyeong-Cheol Kim

5122. Clinical Report of One Chronic Several Patient on Atopic Dermatitis by Using BUDDEUMI (Equipment with Using Combination of Moxibustion and Cupping) during 11 Months
Gyeong-Cheol Kim, Yi-Soon Kim, Han Joe Yang, Su Young Park, Min Young Kim

5123. Alcian Blue Staining Method to Visualize the Lymph Intravascular Bonghan Duct in Rabbit Lymph Vessel
Byung-Cheon Lee, Changhoon Lee, Kwang-Sup Soh

5124. TuRo (Qi Dance) training attenuates psychosomatic symptoms and sympathetic activation induced by mental stress in healthy women
Youn Byoung Chae, H.J. Lee, D.H. Hahm, K.E. An, H.J. Park, H.J. Lee

5125. UHF Measurement along the Meridians and Its Application on Clinical Diagnosis
Michael Krevsky, Ekaterina Zinia, Yuri Koshurinov, Aleck Ovechkin, Wantaek Han, Sang-Min Lee, Gilwon Yoon

5126. Analysis of Changes in the Intensities of Spontaneous Ultraweak Photon Emission during the Growth of the Cell Population of Cultured HeLa Cell Line
Jungdae Kim, Yong-Ung Kim, Young Joo Lee, Jaehong Han, Hyeran You, Ryuichiro Kondo, Seung Ki Lee, Kwang-Sup Soh

5127. Therapeutic Effect of Needle-free Bee Venom Aqua-acupuncture (BVA) at Zusanli (ST36) Acupoint on the Formalin-induced Pain in Rats
In-Jae Jeong, Dae-Hyun Hahm, Hyeong-Soo Lim, Youn Byoung Chae, Sung-Keel Kang, Seung-Moo Han, Hyejung Lee

5128. Investigation on the Morphology of the Budding Bonghan Microcell using SEM and AFM
Ku Youn Baik, Harald Dobberstein, Kwang-Sup Soh

5129. Image Processing for Digital Tongue Diagnosis System
Ji Eun Kim, Yun Hye Eo, Kyung Mo Park

5130. Alcian Blue Staining Method for Visualizing Bonghan Ducts inside Blood Vessels of Mice
Jung Sun Yoo, Min Su Kim, Vyacheslav Ogay, Kwang-Sup Soh

Abstract Preview

Electrical Performance of Cold Sputtered Iridium Oxide Films for Neural Stimulation Electrodes

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Sputtered iridium oxide film (SIROF) was previously reported to show better electrical performances as a stimulation electrode material than activated iridium oxide film (AIROF). Conventionally, IrOx films were deposited at a growth temperature of 400 to 600 °C by use of a heater. However, such high temperature heating can not be used when the IrOx film is to be deposited on a flexible polymer material such as polyimide. Characteristics of IrOx films produced by heated method have been extensively studied. However, films produced by the Cold (unheated) sputtering method have not been studied. In this study, we performed optimization study on the cold sputtering process of the film and report the optimized conditions as well as its characteristics such as charge delivery capacity (CDC). IrOx films were produced on polyimide by DC sputtering at various flow rate of oxygen gas ranging from 0 to 40 sccm. The films were deposited up to 1000nm without heating. In order to confirm the effect of temperature, some samples were heated at various temperatures below 300 °C at which the polyimide substrate is still stable. The IrOx film was patterned by lift-off method and insulated with triple layers of oxide and nitride films. The characteristics of the IrOx film were analyzed electrochemically by potentiostat measurement. Cyclic voltammograms (CV) were obtained from the films and CDC's were calculated from the CV curves. Electrochemical impedance spectrum was also measured. IrOx film has the minimum value of impedance as well as highest CDC when sputtered at the 12 sccm oxygen flow. At this condition, the CDC was higher than that of heated SIROF's. The measured CDC and EIS are compared to those obtained from heated SIROF, AIROF, Au and Pt. Superb

performance of the optimized cold SIROF film on a flexible polymer substrate is expected from this study.

Keywords : Electrical Perfomance, Cold Sputtering, Sputtered Iridium Oxide

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