TEZ NO	AD	SOYAD	MEZUNİYET	TEZ DANIŞMANI
107	Özgür	Kaya	2023	Murat Gülsoy/Fatma İnci Çilesiz
106	Bengü	Aktaş	2023	Bora Garipcan
105	Ahmet doğuka	Keleş	2023	Can Yücesoy
104	İlayda	Duru	2023	Duygu Ege
103	Heba	Alagha	2023	Murat Gülsoy
102	Doğangün	Uzun	2023	Özgür Kocatürk
101	Sezin Eren	Demirbüken	2023	Bora Garipcan
100	Agah	Karakuzu	2022	Can Yücesoy
99	Sevim	Cengiz	2022	Esin Öztürk Işık
98	Alican Onur	Çankaya	2022	Can Yücesoy
97	Seda	Yıldız	2022	Can Yücesoy
96	Cemre Su	Kaya Keleş	2022	Can Yücesoy
95	Sabra	Rostami	2022	Bora Garipcan
94	Melike Güney	Akkurt	2022	Murat Gülsoy
93	Burcu	Güleryüz	2022	Murat Gülsoy
92	Sevgi	Öztürk	2021	Burak Güçlü
91	Fırat	Matur	2021	Özgür Kocatürk/Yekta Ülgen
90	Murat Can	Mutlu	2021	Hale Saybaşılı/ Reşit Canbeyli
89	Davut İbrahim	Mahçiçek	2021	Özgür Kocatürk
88	Seda Nilgün	Dumlu	2021	Ahmet Ademoğlu
87	Fazlı Kemal	Bayat	2021	Albert Güveniş/ H. Özcan Gülçu
86	Kutsev Bengis	Özyörük	2021	Bora Garipcan/ Mehmet Turan
85	Dursun Korel	Yıldırım	2021	Özgür Kocatürk
84	Dilek Betül	Arslan	2021	Esin Öztürk Işık
83	Burçin	Acar	2021	Prof.Dr.Ahmet Ademoğlu
82	Meftune Özge	Öztürk Öncel	2021	Prof.Dr. Bora Garipcan
81	Alp	Özgün	2021	Prof.Dr. Bora Garipcan
80	Fevzi Aytaç	Durmaz	2020	Cengizhan Öztürk
79	Öznur Demir	Oğuz	2020	Duygu Ege
78	Altay	Brusan	2020	Cengizhan Öztürk
77	Fatma Gülder	Şimşek Temiz	2020	Bora Garipcan/ Yekta Ülgen
76	Ali	Demir	2020	Mehmed Özkan
75	İpek	Karakuş	2020	Burak Güçlü
74	Osman Melih	Can	2020	Yekta Ülgen/ Bora Garipcan
73	İlke	Tunalı	2020	Albert Güveniş
72	Sultan	Damgacı	2020	Albert Güveniş
71	Yunus	Karamavuş	2019	Mehmed Özkan
70	Bige	Vardar	2019	Burak Güçlü
69	Alpaslan	Koç	2019	Albert Güveniş
68	Uluç	Pamuk	2019	Can Yücesoy
67	Mustafa Kema	Ruhi	2019	Murat Gülsoy
66	Engin	Baysoy	2018	Özgür Kocatürk
65	Ercan	Kara	2018	Murat Gülsoy
64	Ayşe Sena	Sarp Kabaş	2018	Murat Gülsoy
63	E. Burteçin	Aksel	2018	Murat Gülsoy
62	Bora	Büyüksaraç	2018	Mehmed Özkan
61	Rıfat	Rasier	2017	Murat Gülsoy

60	Onur	Özyurt	2017	Cengizhan Öztürk
59	Gamze	Bölükbaşı Ate	2017	Murat Gülsoy/ Bora Garipcan
58	Burcu	Tunç Çamlıbe	2016	Murat Gülsoy
57	Hakan	Solmaz	2016	Yekta Ülgen/ Murat Gülsoy
56	Özlem	Özmen Okur	2016	Cengizhan Öztürk
55	Aysel	Fışgın	2016	Cengizhan Öztürk
54	İsmail	Devecioğlu	2016	Burak Güçlü
53	Elif	Kubat Öktem	2016	Yekta Ülgen/ Ata Akın
52	Didar	Talat	2016	Albert Güveniş
51	Ahu Nur	Türkoğlu	2016	Can Ali Yücesoy
50	Esin	Karahan Senv	2015	Ahmet Ademoğlu
49	Serdar	Aslan	2015	Ahmet Ademoğlu/ Ata Akın
48	Mehmet	Kocatürk	2015	Albert Güveniş/ H. Özcan Gülçı
47	Murat	Tümer	2015	Yekta Ülgen/ Cengizhan Öztürk
46	Ali	Bayram	2015	Ahmet Ademoğlu
45	Seyed Mortaz	Mousavi	2015	Ahmet Ademoğlu / Mahrokh.G.
44	Nermin	Topaloğlu	2014	Murat Gülsoy/Şahru Yüksel
43	Alper	Yaman	2014	Cengizhan Öztürk/Can Yüceso
42	Görkem	Serbest	2014	Yasemin Kahya/Halil Özcan Gü
41	Sinem Burcu	Erdoğan	2014	Ata Akın /Yekta Ülgen
40	İsmail Burak	Parlak	2013	Ahmet Ademoğlu
39	Şenol	İşçi	2013	Cengizhan Öztürk
38	Dilek	Göksel Duru	2013	Mehmed Özkan
37	Merdim	Sönmez	2013	Özgür Kocatürl
36	Mustafa Zahid	Yıldız	2013	Burak Güçlü
35	Filiz	Ateş	2013	Can Yücesoy
34	Adil Deniz	Duru	2012	Ahmet Ademoğlu
33	Temel	Bilici	2012	Murat Gülsoy
32	Haşim Özgür	Tabakoğlu	2010	Murat Gülsoy
31	Özgüncem	Bozkulak	2010	Murat Gülsoy
30	Ayşe Meryem	Yücel	2010	Ata Akın
29	Özgür	Kocatürk	2009	Cengizhan Öztürk
28	İmran	Göker	2009	Yekta ülgen
27	Haris	Saybaşılı	2009	Cengizhan Öztürk/Ahmet Adem
26	Ömer	Şayli	2009	Ata Akın
25	Mehmet Emin	Aksoy	2008	Hikmet Üçışık
24	Mete	Yeğiner	2008	Yasemin Kahya
23	Rıfat Koray	Çiftçi	2008	Yasemin Kahya
22	Feride Şermin	Bilgen	2008	Hale Saybaşılı
21	Ümit	Uğurlu	2008	Mehmed Özkan
20	Uzay Emrah	Emir	2008	Ata Akın /Cengizhan Öztürk
19	Gökhan	Ertaş	2007	Halil Özcan Gülçür
18	N. Ekin	Akalan	2007	Mehmed Özkan
17	Ali İhsan	Yürekli	2006	Mehmed Özkan
16	Fatih	İşbakan	2005	Yekta ülgen
15	Mana	Sezdi	2005	Yekta ülgen
14	Fatih	Karaaslan	2004	Yağmur Denizhan
13	R. Murat	Demirer	2002	Halil Özcan Gülçür
12	Çağatay	Soyer	2002	Işıl Bozma/Yorgo İstefanapulos
11	Buruk Armağa	Konduk	2002	Hikmet Üçışık
10	Reis Burak	Arslan	2000	Yekta ülgen
9	Gülden	Özen	1999	Yusu p. Tan/George J. Augusti

8	S. Murat	Egi	1999	Yusuf P. Tan/Yekta Ülgen
7	Faik Nüzhet	Oktar	1999	Sabri Altuntaş
6	Zeina	Babetty	1998	Sabri Altuntaş
5	Emin Çağatay	Güler	1998	Yasemin P. Kahya/Bülent Sank
4	Yıldırım	Bahadırlar	1997	Halil Özcan Gülçür
3	Ahmet	Ademoğlu	1995	Yorgo İstefanopulos/Halil Özca
2	Hale	Saybaşılı	1995	Yusuf Tan /Helmut L. Haas
1	Yasemin Pala	Kahya	1987	Yusuf Tan/Ömer Cerid

TEZ KONUSU
Design of a novel non-contact temperature controlled surgical laser system
Design and Fabrication of Neural Culture Structures for Monitoring of Neural Implant Performance
sEMG-based ankle position and moment prediction in silico: Neural network approach and muscle se
Fabrication of carboxymethyl cellulose/gelatin/calcium phosphate cement/carbon nanomaterial scaffo
Development of a combined photodynamic and sonodynamic therapy for the treatment of bacterial in
Development of Novel Device Technolşogies for Safer MRI Guided Biopsy Procedures
Development of nano/micromotors for potential cancer diagnosis and therapy
Human Muscle Structure-Function Relation in vivo Using Magnetic Resonance Imaging Modalities
Development of Software Tools for Improved 1H Magnetic Resonance Spectroscopic Imaging
Assessment of Active State Titin's Effects on Muscle Mechanics Using Finite Element Modeling
Investigation of Kinesio Taping Effect Mechanism with Novel Imaging Analyses
Skeletal Muscle Mechanics and Spasticity Management: Human and Animal Experiments
Biomedical Applications of Sharkskin Mimicked Polymeric Membranes
Indocyanine Green Loaded Poly(lactic acid) Nanoparticles Mediated Phototherapy of Cancer
Photodynamic therapy with upconversion nanoparticles
Prediction of psychophysical responses from spike recordings in rat sensorimotor cortex by using Bay
Bioimpedance spectroscopy in prediction of type I osteoporosis in menopaused women
Investigating The Brain Energy Dynamics During Language Activity
Novel Biopsy Needle and Assisted Robotic System Design for Prostate Biopsy Procedure under MRI
Investigation of functional brain connectivity patterns in temporal lobe epilepsy
A study in cultured neuronal networks
Deep learning approaches for the localization of capsule endoscope
Clinical grade medical device technologies for interventional cardiovascular magnetic resonance imag
Improved multi inversion time arterial spin labeling MRI of the brain
Development Of A Hybrid Methodology For Investıgatıon and Manıpulatıon Of Functıonal Mechanısm
Biomimetic polydimethylsiloxane cell substrate design for enhanced in vitro cellular behavior
Biophysical approaches for modulating neural differentiation
Customizable TDI-Based Whole Body X-Ray Scanner
Development Of An Injectable Polymer-Calcium Phosphate Cement Composites For Bone Substitutio
Development Of A Modular Software Platform For Digital X-Ray Systems
Characterization Of AU, AU/GO And AU/RGO Surfaces For Cartoid Endothelial Cell Proliferation By I
A Macro-Structural Chracteristic Of Brain White Matter: "Dispersion" With Its Clinical And Technical A
Psychophysical Evaluation Of A Sensory Feedback System For Prosthetic Hands
Models to Assess The Quality of Stored Erythrocyte Suspensions by Diffuse Reflectance Measureme
Identifying CT Image Radiomic Biomakers for Predicting Immunotherapy Response of Non-SmallCell
Targetting Tumor Metabolism to Improve Immunotherapy Responses
Application Of Newborn Jaundice Determination And Design Of A Noninvasive Bilirubinometer
The Effects Of Synaptic Modulation On The Vibrotactile Responses Of Somatosensory Cortical Neur
Optimizing The Accuracy of Tumor Segmentation in PET for Radiotherapy Planning Using Blind Deco
Assessment of Local Muscle Deformations Using Muşti-Modal Imaging and Finite Element Modelling
Strategies To Increase Photodynamic Therapy Efficacy On Conventional And Complex In Vitro Canc
Thın Fılm Based Semı_Actıve Rf Marker Desıgn For Interventıonal Mrı Devıces
Desıgn Of A Dynamıc Optıcal Property Monıtorıng System: Studyıng The Effect Of Temperature Cha
Laser Sterılızatıon Technıque For Root Canal Treatment: Investıgatıng The Use Of Hulıum Fıber Las
Depth Assessment Of An Absorber In A Semı-Infınıte Edıum By Contınuous Wave Dıffuse Reflectanc
Identification of Arterial Input Function in Perfusion Imaging with MR Angiography-Supported Semi-Au
Corneal Welding via Infrared Lasers: in vitro & in vivo Studies

Improvement of ASL Based MR Angiography for Novel Applications
Photobiomodulation on Human Osteoblasts and Osteogenic Differentiation of Adipose-Derived Stem
Laser Brain Surgery With Near Infrared Lasers: Investigation of The Optimal Parameters By Real-Tin
Laser Biostimulation and Monitorization of Wound Healing by Means of Bioimpedance Measurements
Detailed Analysis of Voxel Based Morphometry
Design and Application of Compartmentalized Platforms for Neurobiological Research
Articial Tactile Sensation by Microstimulation of the Hindpaaw Represantaion in the Primary Somatos
SOD1 A4V Mutation Increases Nav 1.3 Channel Excitability on Xenopus Laevis Oocyte
Design Of A Collimation For Breast-Specific Gamma Imaging and Assessment Of Nec Rate For A Pe
Assessment Of Effects Of Botulinum Toxin On Muscle Mechanics
Tensor Analysis of Neuroimaging Data
Nonlinear State and Parameter Estimation of the Hemodynamic Model Using fMRI Bold Signal
A Hybrid Biological/ In Silico Neural Network Based Brain Machine Interface
An Optoelectronic Systems for Device Localization in Interventional MRI
Investigation of Oscillatory Mechanisms and Thalamo-Cortical Circuitry of the Visual Systems by Sim
Monitoring Depth Of Anethesia Through Measurement of Phase Coupling among Spontaneous EEG
Antibacraterial Photodynamic Therapy with Indocyanine Green and Near-Infrared Light
MRI Assesment of in vivo Epimuscular Myofascial Force Transmission
Time-Frequency and Time-Scale Analysis of Non-Stationary Biomedical Signals
An Fmrı Based Method For Characterizing Superficial Layer Contamination in Fnırs Signals
Detection And Assesment of Cardiac Patent Foramen Ovale
Revealing Gene Interactions Using Bayesian Networks
Diffusion Tensor Fiber Tracking with Self - Organizing Feature Maps
Clinical Grade Active Guidewire Design for Cardiovascular Interventional MRI
Effects of Mechanical and Temporal Parameters on Tactile Psychophysical Responses
Mechanics of Spastic Muscle and Effects of Treatment Techniques: Assessments with Intra-Operativ
Neuroimaging of Brain Activity Using Spatio -Temporal Signal Modelling
Design and Development of Thulium Laser System for Medical Applications
Skin Tissue Welding With Near Infrared Lasers: Investigation Of The Optimal Parameters
Photofrin And Indoocyanine Green-Mediated Photodynamic Therapy In Cancer Treatment
A Neuravascular Coupling Model Based On Nitric Oxide And Carbon Dioxide And Its Valisation With
Clinical Grade Active Guidewire And Catheter For Interventional Cardiovascular MRI
Investigation Of The Alterations In Motor Units In Neurologic Disorders By Scanning Electromyograph
Advanced Computational Tools For Real-Time MR Imaging
Accuracy Improvements Of NIRS And Investigation Of Muscle Oxidative Metabolism
The Effect Of Dialysis Environmet And The Clinical State Of Patients With Chronic Kidney Failure On
Modelling And Clustering Analysis Of Pulmonary Crackles,
Statistical Analysis Of Cognitive Signals Measured by fNIRS,
TheNanostructural Role Of Water in Lamellar Bone And Its Implications On Osteonal Bone Mechanic
Development Of New Orthosis (Neuro-orthosi) for the control of wrist movements in Patients With Ca
Mutimodel Investigation of fMRI and fNIRS Derived Breath Hold BOLD Signals with an Expanded Bal
Lesion Detection in MR Mammography: NMITR Maps, Dynamic and Morphological Descriptors
Three Dimensional Modelling of Knee Joint: Prediction of Ligament Related Gait Abnormalities
Biological Effects of Electromagnetic Fields at Mobile Telecommunication Frequencies
3-D Gamma Knife Dose Distribution by Normoxic Gel Dosimetry Near Tissue Inhomogeneties
Modeling of Physiological Propertis of Stored Human Blood by Complex Impedance Measurements
Modeling and Analysis of the Interaction Between Renal Sympathetic Nerve Activity, Arterial Pressure
Analysis of Single Trial Evoked Potentials Using Neural Network Structures and Radial Basis Functio
A Model of Active and Attentive Vision.
Comparative Analyses of Artificial Kidney Membranes and Influences of in Vivo Utilization on Their Pr
Novel Methods to Improve Acquisition of Transient Evoked Otoacoustic Emissions for Hearing Screer
Contribution of Superficial Layer Neurons to Presaccadic Bursts in the Superior Colliculus: A Whole-C

Evaluation of Altitude Decompression Procedures and Development of New Decompession Strategie
Characterization of Processed Tooth Hydroxyapatite and Bioglass for Potential Applications in Denti
The Mechanical and Biological performance of the Alternating sliding knots with different patterns in A
Classification, Visualization and Transient Analysis of Respiratory Sound Patterns
Cardiopal: Cardiac Passive Acoustic Localization and Mapping Using 2-D Recordings of Heart Sound
Analysis of Averaged and Single Evoked Potentials Using Damped Sinusoids and Wavelet Basis Fun
pH Dependence of Histamine Modulation on NMDA Response in Hippocampal Slices
A Computerized Pulmonary Diagnosis System.

ABSTRACT

Achieving repeatable and successful results without causing excessive collateral damage is of param
Enhancing neuroprosthetic biocompatibility requires refining approaches to reduce side effects from
Lower limb amputation is the partial or complete removal of a limb, and powered prostheses are the
Compressive strength and inherent osteogenic capacity of calcium phosphate cements (CPCs) rema
Antimicrobial resistance is one of the biggest threats to global health. Developing new treatment mod
Interventional magnetic resonance imaging (iMRI) is a potent method that combines the benefits of n
Recent developments in nano/micromotor based smart drug delivery and diagnosis systems have ga
Non-uniform muscle deformation has become a frequent finding in biomechanics research, using ima
Proton magnetic resonance spectroscopic imaging (1H-MRSI) provides a non-invasive, spatially resc
Calcium dependent mechanical behaviors characterize titin's contribution to force production in three
Kinesio Taping (KT) is an elastic therapeutic tape that is utilized for the prevention and treatment of v
Being the most common motor disability in childhood, cerebral palsy (CP) describes a movement dis
Infection is one of the biggest challenges of implantable biomaterials. The difficulty of eliminating imp
Phototherapy is a promising approach for cancer treatment which can be utilized alone or in combina
Photodynamic therapy (PDT) is an alternative approach to conventional methods (i e. chemotherapy
In this thesis, we studied the fundamental question in neuroscience: how perception is built based on
Bone mineral density (BMD) is a measure of survival for men and women, and it is used to diagnose
The present dissertation aimed to measure the overall cognitive cost of language and visual processi
Prostate cancer (PCa) is one of the most common cancer type among men. The mortality rate for pro
In this study, functional connectivity using both Pearson and partial correlation coefficients and inter-s
In this study, two platforms, combining multi-electrode arrays and optogenetic methods, were develop
Deep learning techniques hold promise to develop dense topography reconstruction and pose estima
Magnetic Resonance Imaging (MRI) is a promising candidate against X-ray fluoroscopy for the image
Arterial spin labeling magnetic resonance imaging (ASL MRI) measures cere- bral blood flow (CBF) c
Anisotropic Network Model (ANM) guided Langevin Dynamics (LD) method (ANM-LD) is an enhance
Recent developments in cell-based therapies and toxicological investigations reveal the need for well
Neural differentiation of stem cells is central to regenerative strategies towards neurodegenerative di
Medical X-ray systems are the gold standard in certain cases of medical diagnostics for over 100 yea
Since the discovery of injectable calcium phosphate (CaP) cements, they are widely used to fill irregu
Health centers require full-body X-ray imaging in their busy trauma departments. Full-body X-ray sca
Endothelium dysfunction may be the cause of cardiovascular diseases such as heart attack, aneurys
The main goal of this thesis is to find distinct macro-structural characteristics of brain white matter in
In this study, a vibrotactile sensory feedback system was designed and tested in accordance with the
Legislation in transfusion medicine define hemolysis level as the quality measure for erythrocyte susp
Checkpoint blockade immunotherapy (IO) provides improved long-term survival in a subset of advan
The acidic microenvironment of solid tumors has suppressing effects on immune cells, accordingly in
Newborn jaundice (hyperbilirubinemia), which is seen in 65% of healthy newborns, is usually a harml
In this thesis, we studied the effects of synaptic modulation on the vibrotactile responses of somatose
Tumor segmentation accuracy greatly affects the effectiveness of radiotherapy procedures. Maximizi
In vivo assessment of muscle deformations, including influence of non-muscular tissues such as NV
Cancer is one of the leading causes of death worldwide. Due to the side-effects and inefficacy of the
Compared to the other imaging modalities Magnetic Resonance Imaging (MRI) system has many adv
In laser applications, it is necessary to know the tissue optical properties before the treatment and ho
Conventional endodontic treatment uses a chemomechanical protocol to eliminate all infected debris
A method to locate an absorber embedded in a semi-infnite turbid medium by spatially-resolved conti
This thesis aims to improve arterial input function (AIF) selection in DSC-MRI by using the informatio
Infrared lasers can be used to weld soft tissues. Water molecules and also protein molecules such as

In this study, a custom four dimensional arterial spin labeling angiography (4D ASL) sequence and a
The present in vitro comparative study evaluated parameters of osteogenesis under the influence of
The thermal damage of the surrounding tissue can be an unwanted result of continuous-wave laser i
Wound healing is critically important for the quality of life. Substantial number of patients suffering fro
Voxel Based Morphometry, VBM, is one of the most widely used brain morphometry methods which a
Conventional culture systems remain inadequate for comprehensive understanding of injury and rege
In this thesis, rats were trained to detect the presence or absence of bursts of mechanical sinusoidal
Amyotrophic lateral sclerosis (ALS) is a lethal, paralytic disease caused by degeneration of motor ne
This thesis is composed of two studies that demonstrate the implementation of Monte Carlo (MC) sim
Effects of widely used Botulinum toxin (BTX) treatment on muscular mechanics are highly important,
Acquisition of large amounts of data in neuroimaging research requires development of new methods
The joint estimation of the parameters and the states of the hemodynamic model from the blood oxyg
Brain-machine interfaces (BMIs) aim to improve the lives of individuals with neurological disease or in
In active catheter tracking, a microcoil directly connected to the MRI system and positioned at the dis
Neural oscillation is an indispensable phenomena in the functioning of the cortical networks. Evoked
Awareness during general anesthesia for its serious psychological effects on patients and some juris
Increase in antibiotic-resistance is a worldwide health problem which may result in septicemia and su
Recent developments have been evolving magnetic resonance imaging (MRI) to a combined tool in c
Fourier transform (FT), which assumes that the analyzed signal is stationary, is not entirely appropria
Functional near infrared spectroscopy (fNIRS) is a method for monitoring cerebral hemodynamics wit
Arterial microemboli are gas filled structures which are formed in intravascular and extravascular env
High throughput biological data (HTBD) targeting understanding of biochemical interactions in the ce
The diffusion tensor imaging (DTI) is unique in its ability to estimate the white matter (WM) fiber tract
In cardiovascular interventions, magnetic resonance imaging (MRI) can be used as an alternative to
Tactile feedback is becoming more important in clinical devices and engineering. Therefore, studies
Present thesis is focused on mechanics of spastic human muscles and the effects of widely used trea
Functional neuroimaging enables us to obtain information about how the brain responds to cognitive
The Thulium (Tm: YAP) laser is suitable for medical applications due to strong absorption in water. In
Laser tissue welding/soldering is an alternative to conventional closure techniques in surgery. In the
Photodynamic therapy (PDT) is a minimally invasive therapeutic approach for clinical treatment of ca
Understanding neurovascular coupling is of paramount importance since while a normal coupling is v
The success and safety of interventional magnetic resonance imaging (MRI) procedures requires cor
In this study, the alterations in the length of cross-sections of MU and the changes in maximum ampl
Real-time Magnetic Resonance Imaging (MRI) has the potential of successfully guiding interventiona
In the first part of the thesis, the effect of fat layer on continuous wave near infrared spectroscopy (cv
In order to optimize the renal replacement therapies many researches have been going on for many
The objective of this study is to perform two complementary analyses of pulmonary crackles, i.e. mod
Further standardization in signal processing tools is needed in the area of functional near infrared spe
The microstructural organization of water in bone was investigated using the environmental scanning
Static wrist orthoses (SWOs) are used in carpal tunnel syndrome (CTS) with some drawbacks. As ar
Multimodal investigation of blood oxygenation level-dependent (BOLD) signal, using both functional r
In this thesis, algorithms, methods and techniques for dynamic contrast-enhanced magnetic resonan
The purpose of this study is to investigate the affect of anterior bundle of ACL (aACL), anterior portio
The increasing use of cellular phones and increasing number of base stations are becoming widespr
The primary goal in this study was to investigate the three dimensional dose distributions, near the ar
In this study, the relationship between physiological properties of human blood, namely Na+, K+, Cl-
High basal renal sympathetic nerve activity (rsna) is known to contribute to the pathogenesis of hype
The single-trial evoked or event related brain potential (s-EP) estimation remains to be a very difficult
Biological vision systems explore their environment by allocating their resources to interesting parts o
The objective of this study was to identify factors affecting adequacy of haemodialysis and relations b
In this study, new signal processing methods are developed to solve some of the common problems
Brief electrical stimulation of the superficial layer of the superior colliculus in the tree shrew (Tupaia g

Diving at altitude requires different tables than at sea level due to the reduction in surface level ambie
In this study possible applications of bioceramics like hydroxyapatite (HA) and bioglass in dentistry ha
New knot configurations, consisting of alternating strands with different patterns, have been studied f
Among the methods for the diagnosis of respiratory disorders auscultation is still the most rewarding
A non-invasive method is proposed for acoustical detection of coronary artery disease in a normal hc
Two new modeling techniques, based on the damped sinusoids and the wavelet basis functions, are
The histaminergic system in the brain emanates from the tuberomammilary nucleus of the posterior h
The lung, the ventilatory apparatus, has the task of producing an alternating mass flow of gas betwee

nount importance for photothermal laser applications. Conventionally, dosimetry studies are conducte
invasive devices. Physical, chemical, and bioactive design aspects of biomaterials are proven to be ir
best solution for restoring amputees' locomotion abilities. Although recent advancements have enhan
ain relatively limited. In this thesis, first, powder and liquid phase of CPCs were optimized. After this, n
dalities that can eradicate pathogens without inducing drug resistant strains, is of great necessity. Phc
minimally invasive procedures and the exquisite imaging capabilities of MRI. Therefore, performing bic
ained much attention due to their efficient capabilities and unique features. Smart drug delivery systen
aging modalities operating at different resolution levels from sarcomeres to fascicles. Mainly due to te
olved evaluation of brain metabolism. However, there are some limitations of 1H-MRSI preventing its v
-myofilament paradigm: (1) Stiffening of PEVK (Proline, Glutamate, Valine, Lysine) segment, and (2)
various neuromusculoskeletal disorders and sports injuries. Despite its widespread use especially imp
order for which the exact underlying mechanism is unclear, and no cure is available. Yet, local injectic
plant-associated infection imposes a huge burden on the patient's life quality aside from the considera
ation with other treatment modalities. Among the available photosensitizers for phototherapy, indocyar
and radiotherapy) that can be utilized to treat various cancers with less side effects. However, PDT h
the sensory stimuli from the physical world and turned into motor actions in the face of uncertain neu
Osteoporosis that can be diagnosed and treated with an effective screening. We measured bioimpec
ing to the brain with ear temperature measurement. Three verbal auditory experiments revealed that
ostate cancer is signicantly high compared to other common cancer types which makes it even more
subject variability were investigated in resting state functional resonance imaging (rs-fMRI) scans that
ped to study living neural networks in vitro. Both platforms,which included stimulation of neural netwo
ation methods for endoscopic videos. However, currently available datasets do not support effective q
e-guidance of minimally invasive procedures thanks to its ionizing radiation-free, exquisite soft tissue
quantitively without using any contrast agent or radiation.The calculation of labelled blood arrival time
d sampling algorithm, in-house developed to study conformational changes between functional protei
l-designed, stable and flexible cell substrates. Mimicking the natural cellular microenvironment by alte
seases. The vast majority of literature shows chemical, biochemical and genetic approaches to contr
ars. The main scope of our studies is to develop a new full-body X-ray scanner device using line scan
ularly shaped bone defects. This created an alternative to more invasive methods such as use of auto
ns are required for bone examinations such as diagnosis of osteoarthritis and degenerative changes
sm, or atherosclerosis. Thus understanding endothelial cell prop- erties helps explaining the reasons a
the case of psychosis, where development of diagnostic imaging measures is necessary for early dia
e discrete event-driven sensory feedback control paradigm. Novel approaches were applied in terms c
pensions (ES). Since the golden standard test for hemolysis is destructive and causing wastage of un
ced stage non-small cell lung cancer (NSCLC) patients. However, highly predictive biomarkers of IO r
nmunotherapy responses. This thesis composed of two main studies as measuring tumor pH with nor
ess condition and passes without any treatment. However, 5% of the jaundiced babies develop kernic
ensory cortical neurons by three different methods: microinjection, microstimulation and a computatio
ng the segmentation accuracy has high medical significance in order to deliver the highest radiation d
Ts, aponeuroses, fasciæ or overlying skin, is key due to functional relevance of tissue connectivity wit
conventional cancer treatment methods, alternative modalities are researched. One of the alternative
vantages. There is a great demand to carry out interventional cardiovascular procedures under MRI s
ow they change during the treatment. The optical monitoring system with double-integrating-sphere ha
and take the bacteria out from the root canal in order to prevent the development of persisting apical
inuous-wave di_use re_ectance measurements is introduced. The possible of use the method as a pr
n gathered through magnetic resonance angiography (MRA) and cluster analysis of the concentratior
s collagen absorb the infrared energy and a temperature gradient can be created at the application si

proof-of-concept software tool to integrate 4D ASL data to routine scanning were implemented. One
photobiomodulation (PBM). PBM uses light in the visible and near infrared spectrum to induce a non-
rradiation. In order to propose an effective way alternative to conventional surgical techniques, photot
om non-healing chronic wounds and having serious difficulties in their daily life are reported in wound
aims to reveal the structural differences between the brain MR images of different populations. It is a
eneration in peripheral neurons that extend axons over long distances and through varying extracellul
vibrations (duration: 0.5 s, zero-to-peak amplitude: 200 μm, frequency: 40 Hz) delivered to the volar s
urons in the spinal cord, brain stem and motor cortex. Mutations in the gene encoding copper/zinc su
nulations and response surface methodology (RSM) to specific problems in planar and tomographic n
but their mechanism and time course are not well understood. Present thesis is focused on mechani
s that can disentangle the underlying information and reveal the features related to cognitive processe
gen level dependent (BOLD) signal is a challenging problem. In the functional magnetic resonance im
njury, by opening new information transfer channels between brain tissue and prosthetic actuators. In
stal end of the catheter is employed for localization. The peaks in the frequency spectrum of the acqui
neural oscillations triggered by external rhythmic stimulation mimic spontaneous ongoing oscillations,
tically problems for anesthetists has been an important challenge during past decades. Monitoring de
bsequent death in recent years. Some of these deaths are caused by nosocomial, burn or chronic wo
order to assess human anatomy and physiology in vivo. In the present thesis 3D high resolution anato
ate to analyze biomedical signals since they are in non-stationary nature. To overcome this drawback,
th a wide range of clinical applications. fNIRS signals are contaminated with systemic physiological in
ironment. They are characterized in spherical or ellipsoid forms which would cause diseases in a broa
ll can best be analyzed, and explained within the context of networks and pathways. Such data gener
s in vivo noninvasively. The post-processing of DT images needs proper image analysis and visualiza
X-ray fluoroscopy to address problems such as soft tissue contrast and exposed ionized radiation. In
on basic sensory processing in the somatosensory system are essential. In this thesis, the mechanica
atment methods in the context of the determinant role of epimuscu- lar myofascial force transmission
and/or emotional tasks. Neuroimaging of brain activity requires spatio-temporal modeling of measure
n this thesis, a computer controlled Tm: YAP laser system with a power output up to 1 W and emissio
present study, the closure capability and the contribution to recovery period of laser welding techniqu
ncer. PDT-mediated oxidative stress leads to cell death and can elicit the expression of genes associ
vital for a healthy functioning brain, the impairment in coupling is the underlying factor of many neurod
nspicuous intravascular instruments that can be distinguished from surrounding tissues. In this disser
itude of MUAPs in each MU in patients with JME were investigated. An experimental setup of scannir
l applications. Overall, the requirements of real-time MRI can be categorized as: (i) fast data acquisiti
w-NIRS) measurements were investigated in detail, both in terms of underestimation error (caused by
years. The tendency for dialysis therapy is towards high flux hemodialysis in the last few years. For u
deling and clustering, in order to interpret crackles in time frequency domain and also determine the c
ectroscopy (fNIRS) before it is recognized as a reliable neuroimaging modality. This thesis study atte
electron microscope to analyze the dimensional changes that occur during dehydration of equine os
n alternate approach, an active closed-loop wrist control strategy was proposed to limit wrist movemer
near infrared spectroscopy (fNIRS) and functional magnetic resonance imaging (fMRI), may give furth
ce mammography (DCE-MRM) have been investigated to maximize sensitivity, specificity and reprod
n of posterior cruciate ligament PCL (aPCL), anterior and deep portions of MCL (aMCL, dMCL) and t
ead source of non-ionizing electromagnetic radiation. The immediate biological effect of electromagn
reas of tissue inhomogeneities, in Gamma Knife Radiosurgery with the normoxic gel dosimetry. Follo
concentrations, pH, 2,3-DPG and ATP, and its electrical parameters, the Cole-Cole parameters- the r
rtension, congestive heart failure, nephrotic syndrome and hepatic cirrhosis. Because of this clinical ir
t problem due to many interfering noise sources and artifacts with spatio-temporally overlapping respo
of a scene, using both physical and mental attention mechanisms. The result of this active and attenti
between them using Taguchi Method (fractional factorial experiments) throughout minimum of tests. D
in transient evoked otoacoustic emission (TEOAE) acquisition. The aim is to facilitate the universal a
glass) evokes prolonged bursts of excitatory postsynaptic currents (EPSCs) in premotor cells of the su

ent pressure. In this work, the rationale for the algorithms extrapolating the sea level diving data are r
ave been studied. HA was derived from freshly extracted human teeth in laboratory conditions as plas
rom mechanical and biological perspectives in order to determine whether they would be suitable for
method since it is simple, patient-friendly and non-invasive. Recent advancements in measurement a
ospital environment. The diastolic heart sounds recorded via a high sensitive phonocardiography syste
proposed for the analysis and investigation of Evoked Potentials (EP). The damped sinusoid modelin
ypothalamus and projects to the whole central nervous system. In this research, the effect of histami
en the external atmosphere and the lung alveoli, during which it functions both as a mechanical pump

d on laboratory animals to determine ideal laser parameters. Unfortunately, these predetermined para
nportant for providing proper cell-to-cell, cell-tomaterial interactions. Modifying neural implant surfaces
ced their hardware, autonomous adaptation is required to achieve natural ambulation. The utilization
anodiamond (ND) and Fullerenol (Ful) were incorporated into carboxymethyl cellulose/gelatin (CMC/G
otodynamic therapy (PDT) is such a promising modality that aims to destroy pathogens using light-act
opsy operations under the guidance of real-time MR imaging can increase success and safety of oper
ns are preferred for reduced side effects, increased effectiveness, and controlled release in specific lo
chnical limitations, interpretations of these findings are detached from a theoretical foundation that co
wider use in the clinics, including the spectral quality issues, partial volume effect, chemical shift artifa
reduction of free-spring length via N2A-titin binding. This thesis is focused on the introduction of an a
roving muscular function, there is a lack of understanding of its effects on muscular mechanics. In viv
on of botulinum toxin type-A (BTX-A) is used for spasticity management. In this thesis, the relationshi
able financial cost of the treatment. Thus, effective approaches must be explored to design biomateria
hine green (ICG) merits special attention, owing to its near infrared absorption characteristics and low
as some restrictions such as photosensitizers delivery and light penetration depth. It was realized tha
ural representations. The vast body of literature contains models using neural activity to decode stimu
dance spectroscopy (BIS) parameters of 129 menopaused women and compared them with their DEX
processing words caused a greater temperature increase in the left ear than the right ear, indicating a
concerning for elderly males. For this reason the early and accurate diagnosis of PCa is vital to avoid
t belong to healthy and temporal lobe epileptic (TLE) patient populations. The main purpose of this th
rks developed in culture and monitoring of their activities, were tested using primary neuronal cultures
quantitative benchmarking. In this thesis, we introduce a comprehensive endoscopic simultaneous loc
contrast and ability of 3D real-time imaging in arbitrary planes. However, interventional MRI (iMRI) is
to tissue and arterial vessels provides hemody- namic information, which may be useful in understan
n structures, that are not possible by traditional techniques. In this thesis, the applicability of ANM-LD
ring cell substrate properties (stiffness, topography and chemical/biochemical composition) can signif
ol and utilize intrinsic or extrinsic stem cells for neural regeneration. However, biophysical factors are
ner detectors, and a plug and integrate hardware controlled system, this new device called SyncBox.
grafts, allografts, xenografts and synthetic pre- shaped scaffolds. Hence, this thesis aimed to design
in the lumbar spine. The most preferred solution is to take digital X-ray images and then to stitch ther
and treatment of cardiovascular diseases. Electrical impedance spectroscopy (EIS) is a real-time tool
gnosis and prospective studies. Given a tractogram data, which is a dense set of white matter fiber p
of data processing and psychophysical characterization. As the first part, the sensing and signal proce
its, the hemolysis levels of ES are currently assessed with deceptive visual inspection method and th
response are an unmet clinical need. In this thesis, pre-treatment clinical covariates and quantitative i
n-invasive methods using MRI/MRSI and targeting tumor acidity to improve immunotherapy response
ctures which may cause irreversible brain damage. Therefore, detection and follow-up of jaundiced ba
nal model. First, we recorded single-unit spikes evoked by sinusoidal (duration: 500 ms; frequency: 5
dose to the target volume while protecting the healthy tissues. This dissertation aims to present an op
hin limb. In integral framework of anatomy, understanding deformations in muscle and non-muscular
es, Photodynamic Therapy (PDT), is a photochemical approach, which is based on the activation of a
scanner. However, the lack of visible markers and MRI compatible interventional instruments and devi
aving a special sample heating apparatus was designed to investigate the e_ect of temperature on op
periodontal inflamation. The inadequate penetration depth of irrigants and anatomical irregularities o
riori information in di_use optical imaging is discussed. The depth of the absorber is assessed by sing
n time curve (CTC) parameters. MRA was utilized with a dual-purpose, identifying arterial locations du
te. Objective of this PhD thesis is to investigate the potential of infrared lasers for welding tissue to co

of the aims of this study was to test whether the combined use of 4D ASL and contrast-enhanced MR
thermal process and to activate endogenous chromophores, which may result in therapeutic outcome
hermal damage must be taken under control by a detailed dose study. Real-time temperature monito
healing studies. However the exact mechanism of healing is not fully understood yet. Scientists have
whole brain and fully automatic approach in which all the images are registered onto a common temp
ar microenvironments. Therefore, a highly tailorable in vitro system, that allows studying in different ir
surface of their hindpaws in a novel vibrotactile operant chamber. In psychophysical experiments, psy
peroxide dismutase (SOD1) are present in 20 % of familial ALS and 2 % of all ALS cases. The most c
uclear medicine imaging. In the first study, the collimator of a planar small field-of-view continuous cr
cal mechanism of BTX treatment using finite element method and animal experiments. In an isolated
es. This thesis attempts to propose new methods that favor the multimodality and multidimensionality
aging (fMRI) literature, quite interestingly, many proposed algorithms work only as a filtering method.
a majority of the BMI work, the data acquired from the motor cortex neurons are decoded into user's
ired MR signal correspond to catheter's physical location. The major problem with active techniques is
, thus could shed light on the intrinsic specialization and tuning of the cortical networks. In this thesis,
epth of anesthesia is a fundamental solution to this problem. Induction of anesthesia alter frequency a
ound infections. Photodynamic therapy can be an alternative technique in treatment of infections. This
omic and diffusion weighted imaging capabilities of MRI were combined with nonrigid registration tech
FT can be applied over short-windows of time within which the signal can be considered to be statior
terferences from both the brain and superficial tissues, resulting in a poor estimation of the task relate
ad range from stroke to migraine. Cardiac Patent Foramen Ovale (CPFO) is considered as a congeni
rally represents stochastic nonlinear relations embedded in noise. Bayesian Network (BN) theory prov
ation tools. However, accurate WM anatomical maps should be provided to clarify the multiple orienta
recent years, advances in imaging techniques and innovative procedures have increased interest in u
al and temporal parameters affecting the absolute tactile detection threshold of human Pacinian (P) cl
(EMFT). A novel intra-operative method was devel- oped to measure human Gracilis (GRA) muscle i
d electrical and/or hemodynamic data and integration of the measurements obtained at different spat
n wavelength of 1980 nm were established. Once the laser system was stabilized, its output power, s
es were investigated through comparative experiments. Effects of three near infrared (NIR) waveleng
ated with cell survival, such as AKT/protein kinase B. Phosphorylation and subsequent activation of A
legenerative diseases. With this motivation, we aimed to test the still-debatable hypotheses and impo
tation work, an "active" (receiver-coil) clinical grade vascular guidewire and guiding catheter were dev
ng EMG was built and 3-D cross sectional maps of the MUs were plotted in order to measure the leng
on, (ii) fast image reconstruction, and (iii) good image quality. Fast data acquisition is provided by opt
homogeneous medium assumption) and crosstalk between chromospheres because of homogeneou
nderstanding the behavior of newly designed hollow fibers under high flux dialysis condition, new exp
ptimal number of crackle types and their characteristics using the modeling parameters. Since the cr
mpts to present a comprehensive analysis of the feasibility of applying statistical inference methods to
teonal bone. In longitudinal sections, 1.2% contraction perpendicular to the lamellae, 0% parallel to th
nts. It was based on the electrical stimulation of antagonistic muscle(s) to prevent motion beyond pres
ner insight to the underlying physiological principles and the detailed transient dynamics of the vascula
ucibility of breast cancer diagnoses. A novel lesion localization method that uses cellular neural netwo
he tibiofemoral articular contacts on to passive knee motion. A well accepted reference model for a n
etic (EM) radiation is the generation of heat in the body and it is generally evident under high levels of
wing irradiation, when scanned in MR and post processing the MR images, dose imparted to any part
resistance of the extracellular fluid (Re), the resistance of the red cell interior fluid (Ri), phase angle, c
mportance of rsna a mathematical model has been developed, which allows the long-term analysis of
onse components and due to the nonstationarity nature of these signals. In this thesis work a new cla
ve vision behavior is a sequence of images obtained from different spatial locations at different times.
Dialysis age, dialyzer membrane material, haematocrit, interdialytic weight difference, dialysate, pump
uditory screening of newborns using TEOAEs. For this purpose, averaged and single sweep raw data
ubjacent intermediate layer. The large amplitude and long duration of these EPSC bursts suggest that

eviewed. When applied to different sets of maximum permissible tissue tensions (M value), the conse
sma coating and grafting material and basic techniques for material characterization were performed.
abdominal surgery, as compared with conventional sliding knots. Mechanical properties of these new
and signal processing techniques have opened the path for intelligent stethoscopes. By an intelligent s
em are utilized to differentiate the coronary artery victims. A frequency- domain adaptive filter is used
ıg is applied to the averaged and the single trial EPs and the relation between the spontaneous brain
ine was investigated in the CA1 region of the hippocampus of rats in vitro. The enhancement of activi
and as a gas exchanger. Spirometry is a method which aids in the diagnosis of the condition of the l

ameters cannot ensure patient safety and treatment success in the clinic due to variance between opt
s with bioactive cues, particularly employing cell adhesion molecules, shows promise in creating effici
of surface electromyogram (sEMG) holds promise, whereas real-time analysis is challenging. Also, a
Gel) CPCs to enhance their ability to promote compressive strength and bone formation, respectively.
ivated drugs, but is limited by the light penetration depth in tissues. Its close relative, sonodynamic th
rations by promising precise, accurate, and safe MR-guided biopsy operations. Designing visible and
ocations. Nano/micromotors enable motion control and propulsion, leading to reduced drug concentra
onsiders the muscle with mechanical links to its surrounding. To enable this vital consideration, this th
uct, and low spatial resolution. Additionally, it is necessary to create metabolite maps for analyzing spe
lternative perspective to the analysis of titin with incorporating epimuscular myofascial loads. Isolated
vo analyzes of muscle mechanical response to external loads caused by KT is crucial to define its unk
o between the mechanics of spastic muscles and the impaired joint motion was investigated in patient
ls with enhanced antibacterial activity. Sharks have been investigated via biomimetic and bioinspiratic
dark toxicity. However, a strong tendency for protein-binding and aggregate-forming limits its use as
t these problems can be overcome with the improvements in nanotechnology; and today, many resea
lus parameters, motor responses, and behavioral patterns. In particular, this line of research became
KA reference measurements. We observed a region specificity for the central BMD assessment using
an expected left-hemispheric activity for language processing. Furthermore, processing words from a
deaths caused by PCa. In clinical practice, PCa is diagnosed with ultrasound guided biopsy procedu
esis is to reveal the discrepancies between the healthy population and the patients with TLE in terms
s obtained from mice and their operability and usability were demonstrated. In the first platform, dorsa
alization and mapping (SLAM) dataset consisting of 3D point cloud data for six porcine organs, capsu
hampered by the lack of clinical grade MRI-compatible interventional devices. In this thesis study, firs
ding neurodegenerative disorders. Separate pseudo-continuous ASL (pCASL) MR can be done at mu
was validated on various non-globular systems, then assessed on vitamin B12 importer BtuCD by m
ficantly affect cell-substrate interfacial characteristics and potentially influence cellular behavior. Henc
also able to regulate stem cell fate with some added advantages. They can be administered to organ
Main focus of this particular dissertation is to control the total electronics and mechatronic systems o
an alternative injectable bone substitute (IBS) that can better accommodate CaP additives while pres
n together via a dedicated software. This approach has limitations concerning imaging time, costs, ap
for evaluation of cell behavior. In this dissertation, human carotid artery endothelial cell (HCtAEC) pro
athways of the whole brain obtained from diffusion magnetic resonance imaging, we propose to comp
essing system was designed. Therefore, a robotic hand was equipped with force and bend sensors by
e national blood banks periodically perform statistical quality analysis by measuring the hemolysis lev
mage-based features (i.e., Radiomics) were utilized to identify parsimonious models that predict rapic
s. Firstly, we developed two different MR imaging techniques to monitor tumor pH. We have shown th
abies are very important. The most common method for the evaluation and follow-up of neonatal jaun
, 40, and 250 Hz; amplitude: 100 _m) stimulation of the glabrous skin. The changes in the responses
timized method to minimize errors in the automated segmentation of tumors in PET images. Blind de
connectome, and mechanical interactions therein, is crucial. Muscle deformations caused by externa
photosensitive chemical (photosensitizer) by a specific light source for creating reactive oxygen spec
ices, is the main problem for realizing clinical applications with MRI guidance. In order to provide wide
otical properties. Temperature dependent optical property changes was investigated using lipid emulsi
f root canal negatively affect the success of the treatment. Laser assisted endodontic treatment is a n
gle wavelength spatially-resolved continuous-wave di_use re_ectance measurements by two detectors
uring the parametric evaluation of CTCs in DSC-MRI, and avoiding shape distortions in AIF. The know
ontact lens and also for cornea welding in order to seal corneal cuts done during cataract surgery. On

R angiography (4D CE-MRA) can work as a prospective alternative to digital subtraction angiography
es. Although the cellular and molecular mechanisms involved in the PBM are still unclear, studies sug
ring can be also an effective way to get rid of these side effects. The aim of this study was to overcor
been investigating modalities for stimulating the wound healing process. Laser photobiomodulation h
olate and then segmented into grey matter, white matter and cerebrospinal fluid. After an optional mod
n vitro models that mimics axonal injury, regeneration and nerve transplants is required. This dissertat
chometric curves were obtained for three frequencies (40 Hz, 60 Hz and 80 Hz). Then, the rats were
common SOD1 gene mutation in North America is a missense mutation substituting valine for alanine
ystal breast specific gamma camera is optimized by maximizing the lesion contrast-to-noise ratio (CN
muscle model partial paralyzation is shown to cause (i) the sarcomeres to attain higher lengths throu
of the brain data. The main difficulty for the fusion of imaging modalities is the discrepancies in their
In the fMRI state estimation literature, extended Kalman filter (EKF) is asserted to be not robust and
intended prosthetic actions by some "optimized" input-output mathematical model. Although this app
s the RF heating due to long conducting wires. Fully optical systems that replace the conducting wires
flickering light stimulation is used to constitute steady state for a wide range of temporal frequencies
nd mean of amplitudes of the electroencephalogram (EEG), and its phase couplings. By increasing th
s research aimed to investigate the bactericidal effect of photodynamic therapy with indocyanine gree
nique in order to quantify principal strains and fiber direction strains locally. The presented method wa
nary. However, this short-time Fourier transform is hampered with a serious time-frequency (TF) trade
ed neuronal activation. In this study, we introduce an extended superficial signal regression (ESSR) m
tal defect through both atria as a permeable shunt with a prevalence frequency of 25-30% in asympto
vides a framework to analyze the data regarding gene regulation measurements, as this framework na
tional fiber paths within uncertainty regions. These regions with intersecting trajectories generate a cr
using MRI guidance for minimally invasive procedure. An increasing number of procedures have beer
hannel were investigated. Temporal summation in P channel was found to be independent of stimulus
sometric forces with respect to knee angle. In healthy subjects, GRA was shown to have very large o
ial and or temporal scales. In this thesis, new techniques are employed for the investigation of spatio-
spot size, and light intensity measurements were performed. The thermal effects of the laser system o
ths, 809 nm diode laser, 980 nm diode laser and 1070 nm ytterbium ber laser, were compared not on
AKT induces a survival response. For the first time in literature, our results from in vitro and in vivo exp
rtant aspects of neurovascular coupling: whether the coupling is controlled metabolically or neurogen
veloped with enhanced visibility and favorable mechanical characteristics for MRI guided cardiovascul
gth of cross-sections and to find the maximum amplitude of each MU. Three subject groups comprisin
timized real-time sequences, by parallel MRI (pMRI) techniques, or by non-Cartesian acquisition sche
us medium assumption and wavelength dependence of mean partial path length in the muscle layer.
eriments should be designed. Experiments are designed to study the stability of the two different mer
ackles are superimposed on background vesicular sounds, a preprocessing method for the eliminatio
o fNIRS signals. Using hierarchical linear models, both classical and Bayesian techniques are pursue
ne lamellae; in transverse sections,1.4% contraction both parallel and perpendicular to the lamellae w
set limits. The purposes of the study were to determine whether the proposed “neuro-orthosis” (NeO)
ar response. Utilizing a breath hold task (BHT), we measured deoxy-hemoglobin (HbR) and oxy-hemo
orks (CNNs) was developed. The breast region was segmented from pre-contrast images using four s
ormal tibio-femoral joint was reconstructed from the literature in which attachments of the bundles of
f electromagnetic energy. However, some biological effects are likely to occur even at low-level EM fie
icular point in the gel phantom can be calculated via the true T2 relaxation time at that point. In the ne
characteristic frequency (Fc) and the capacitance of the cell membranes (Cm)- is investigated. Measu
the effect of rsna on arterial pressure and sodium excretion. Previous long- term cardiovascular mod
ss of neural network model and associated learning algorithm has been developed for s- EP estimati
. However, temporal processes and integration mechanisms in the brain enable us to interpret this inf
o speed, heparin type, and socio-economical status were applied as parameters for Taguchi Method in
a were recorded using two different instrumentations. Various techniques used in digital signal proces
t intracollicular circuitry may contribute to the generation of the bursts of action potentials that premot

ervatism of an algorithm becomes a function of bottom time, depth and altitude. Aviation altitude expos
The HA produced by this method is simple and economical when compared with conventional metho
knots were compared with those of the classical sliding knots and single threads for silk and nylon su
stethoscope, one intends a computerized auscultation device which can register and process the sou
to effectively eliminate the background noise from these weak signals and to promote Autoregressive
electroencephalogram (EEG) and EP is observed as a phase reordering and amplitude enhancemen
ty mediated by classical histamine receptors has been confirmed and a new independent action of his
ung as a mechanical pump through pulmonary function tests. In this work, a microprocessor-based sy

tical and thermal characteristics among subjects. Controlling laser irradiation with tissue temperature
ient interfaces. Within this concept, this study utilized N-Cadherin, NCAM and the mixture (1:1) of thes
systematic analysis should be conducted for muscle selection to ensure compatibility with different le
. It was found that ND did not contribute to the compressive strength of CPCs in unfunctionalized form
erapy (SDT), has the capability to overcome this limitation, due to the superior tissue penetration of lo
safe interventional equipment continues to be a major challenge in this field as MRI develops into a m
tion, faster delivery, and enhanced penetration into inaccessible tissues. Hence, in the first part of the
esis aims at developing and testing the validity of a multimodal MRI method that bridges the understa
ectral data along with other MRI modalities. In the first part of this study, a MATLAB-based open-sour
l and integrated rat muscle finite element model variations were used with three titin models: passive
known action mechanism and to improve this kind of therapeutic approaches. Due to continuity of fas
ts, and the long-term effects of BTX-A on muscular mechanics were assessed in animals. Experimen
on approaches and discoveries have shown that sharkskin possesses antibacterial effects due to the
a phototherapeutic agent. Such a drawback can be eliminated with the utilization of nanosized drug c
archers have been initiated to study on PDT with various combinations of photosensitizers-nanopartic
more important as sensorimotor neuroprostheses and brain-computer interfaces (BCI) were made p
BIS. When sensing electrodes are on the dominant hand and infraclavicular fossa, dominant arm fc
non-native language (English) caused greater cognitive cost (greater temperature increase) compare
re (TRUS-guided biopsy) after observing signs of PCa with di erent pre-screening methods. Howeve
of functional connectivity revealing the temporal dependency among different brain regions. Accordin
l root ganglion cells were made to emit fluorescent light when calcium influx occurs by optogenetic te
ule and standard endoscopy recordings, synthetically generated data as well as clinically in use conve
t, a lowprofile iMRI device fabrication method was introduced by modifying the conductive ink printing
ultiple inversion times (TI) to avoid inaccurate CBF estimation due to uncertainties in arrival times, wh
eans of experimental observations and comparison of computational outcomes with maltose importer
e, the main objective of this thesis is to design biomimetic Polydimethylsiloxane (PDMS) cell substrat
isms completely non-invasively or used as an integral part of in vitro models. Effects of substrate stiff
f the device. full body X-ray scanner will be useful for trauma studies and bone surveys, where its hig
serving bone- like rheological properties and performance. In this thesis, an IBS was prepared by usin
oplied dose, and image quality. An alternate solution that optimizes all these factors for full-body imag
oliferation on graphene derivatives was analyzed through EIS, optical images, Alamar Blue cell viabilit
oute a global measure of dispersion for a voxel from the end point statistics of a set of fibers, which in
y mimicking receptors in human hand. The sensor data was recorded during a cylindrical grasping tas
els of only few units on their expiration dates. There are numerous studies revealing negative conseq
l disease progression (RDP) phenotypes and survival outcomes among NSCLC patients treated with
hat the difference in pHs before and after L-DOS47 treatments were statistically significantly different
dice is measuring the level of total serum bilirubin (TSB). Transcutaneous bilirubin (TcB) measureme
were studied with microinjection of aCSF (sham), bicuculline, AMPA and NMDA near the isolated ne
convolution was implemented in a region of interest encompassing the tumor with an iteration numbe
l loads, e.g., KT, are conceivable and crucial to quantify when exploring KT's unknown action mechar
ies that are toxic to cancer cells. A number of in vitro and in vivo studies, as well as clinical trials, are
espread usage of MRI for endovascular operations, commercial catheters and guidewires must be ma
ion. It was found that the re_ectance value showed negative correlation with temperature and transmi
new and effective adjunctive method in root canal to enhance the quality of the conventional treatmen
s in a radial row. The ratio of perturbations introduced by the defect at two detectors is used to be ma
wledge of arterial locations is essential to the research, as it guided the cluster analysis carried out wit
e of the new application in the field is our study about amniotic membrane welded to contact lens by

(DSA) for the delineation of the AVM nidus in stereotactic radiosurgery (SRS) planning. Our results in
gest that reactive oxygen species (ROS) produced in response to PBM, can induce activation of man
ne the side effects of photothermal interactions with a better establishment of experiments for investig
as become widespread supporting the idea of therapeutic effects of laser irradiation in biological tissu
dulation step (regaining the original volume which is shrinked or enlarged during the registration), smo
tion presents the development and application of novel compartmentalized in vitro cell culture platform
implanted with microelectrodes in the hindpaw representation of the primary somatosensory cortex a
(A4V). In this study, sodium channel currents in oocytes expressing either wild type or mutant (A4V)
IR) with respect to hole diameter, septal thickness and hole length. This study demonstrated that the
ghout the entire muscle (e.g., at short muscle length, the inactivated fascicles of middle half paralyze
spatial and temporal resolutions as well as the different physiological processes they reflect. This pro
worse than standard particle filters (PF). We compared EKF with PF and observed that the contrary i
roach is quite sound, the information processing principles used are fundamentally different from thos
s with inherently RF-safe optical fibers are proposed. In these systems, the SNR suffers from the elec
(6-46 Hz) during simultaneous electroencephalography (EEG) and blood oxygenation level dependen
ne anesthetic drug dose, the mean frequency of the signal decreases and its amplitude increases and
n and near-infrared light in vitro and in vivo. First, the effect of indocyanine green and 809-nm laser li
as used to assess the effects of epimuscular myofascial force transmission (EMFT) and external mec
e-off dilemma. Recently, a number of different TF analysis techniques has been developed that provid
nethod for cancelling physiology-based systemic interference in fNIRS signals. We apply and validate
omatic population. Decompression Sickness (DCS) is a fatal disease during hyperbaric and hypobaric
aturally handles the aforementioned obstacles. In this dissertation, we provide a two faceted approach
itical tractography issue in DTI literature. WM fiber tractography needs a standard- ization, a generall
n carried out on animals and quite a few studies have been conducted on humans. However, to accor
s frequency and the experimental results did not t the classical model of temporal summation. The mo
perational length range. For spastic cerebral palsy patients on the other hand, GRA muscle did not sh
- temporal dynamics of different functional data as the EEG-ERP, the invasive/non-noninvasive recor
on brain, liver, heart, and kidney tissues were macroscopically analyzed. The ablation efficiency of the
ly among themselves but also with classical manual suturing for skin closure competency. Lasers wit
periments demonstrated that PDT treatments mediated by excitation of Photofrin with a 630-nm diode
ically, how the coupling is propagated, what kinetics the cerebral metabolic rate of oxygen (CMRO2)
ar interventions. Both 0.035-inch guidewire and 7 Fr guiding catheter were designed combining two d
g nine patients with juvenile myoclonic epilepsy as JME group, ten healthy volunteers as normal cont
emes (e.g. spiral and radial trajectories). However, fast image reconstruction is non- trivial, especially
These errors have been investigated by Monte Carlo simulations with a skin-fat-muscle layered tissue
nbranes, polysulfone and polyamide, from high flux dialyzers. Hemodialysis sessions were performed
n of vesicular sounds from crackle waveform is also proposed for achieving accurate parameterizatio
d and performances of different methods are presented on a comparative basis. The results obtained
ere observed. Scanning electron microscopy back scattered electron images showed that about half
system resulted in less restriction in the function and strength of the hand compared to custom-made
oglobin (HbO) changes via fNIRS and blood oxygen level dependent (BOLD) changes by fMRI. Measu
specifically designed CNNs. A 3D normalized maximum intensity-time ratio (nMITR) map of the segm
the ligaments and the articular surfaces in medial and the lateral components were carefully defined.
elds. In this study, a Gigahertz Transverse Electromagnetic (GTEM) test chamber was used as an ex
eighborhood of air-tissue inhomogeneity in the head, electronic disequilibrium can lead to errors in do
urements are performed on 51 erythrocyte suspension (ES) samples, subject to42 days of storage at
lels in the literature do not explicitly include most of the effects of rsna on kidney functions. Some of th
on. The model is called M-NARMAX and uses a mixture of such techniques as radial basis functions
ormation and perceive a stable image of the environment. While models of such attention and percep
n order to drive out not only their individual effectiveness on the therapy but also interactions among t
sing of data have been applied for the first time, to the acquired TEOAE signal, and they are shown to
or cells use to command saccades. In this study, we use whole-cell patch-clamp methods to examine

sure decompression sickness (DCS) data is also addressed. Animal experiments performed within th
ds which are tedious and time consuming. Bioglass compositions used in this study, were produced f
utures under dry conditions. From the mechanical perspective, the new knots showed better knot hol
nd signals, display them with sophisticated visualization techniques and can provide to the physician
e (AR) parameters having distinctive features between normal and diseased subjects. For the noise c
t of certain damped oscillations. The method which estimates the single trial EP in EEG, allows for tra
stamine on N-Methyl D-Aspartatic acid (NMDA) receptors has been described in, 1. hippocampal slice
ystem has been developed to improve on the accuracy of the measurement of the pulmonary functior

feedback is the current gold standard for various photothermal treatments. In this dissertation, I prese
se molecules with the aim of modifying representative gold electrode surfaces to enhance neuron-ele
evels of amputations. Therefore, the feature extraction was implemented for non-normalized sEMG ar
n; however, it was efficient to reduce the setting time of cements. Besides ND, the biocompatible Ful
ow-intensity ultrasound compared to light, but the full potential of this therapy has not been realized ye
more accessible and suitable imaging modality for interventional procedures. In this thesis study novel
e thesis, self-functionalized polymer poly(3-aminophenylboronic acid) (PAPBA) enriched nanomotors
anding between non-uniform mechanical deformations and their myofascial origins, in-vivo. 1) Supplen
ce data analysis software for three-dimensional 1H-MRSI, called Oryx-MRSI, which includes modules
state titin, active state titin-I and active state titin-II. Results of isolated model showed that active state
cial system by muscular connective structures (epimysium, perimysium, and endomysium) and the int
ts on spastic knee flexors showed that passive muscle forces are much less than active forces (e.g.,
reduced drag force on the skin whilst swimming which is because of their skin's surface microstructu
delivery systems to encapsulate and protect ICG molecules. Numerous drug delivery systems incorpo
les. Recently, upconversion nanoparticles (UCNP) have revealed promising results with different surfa
ossible by recent advances in technology. The real-time algorithms used in those applications have m
correlates with the hip BMD (r = -0.412; P < 0.05), and fcut for Osteoporosis is 49.565 kHz. When se
ed to words from the native language (Turkish). Lastly, it was found that the greatest temperature incr
r, diagnosing PCa with the TRUS-guided prostate biopsy is controversial mainly because US imaging
g to inter-subject variability results, TLE population exhibited higher inter-subject variability in frontopa
chnique. In this platform stimulation was provided electrically through multiple electrode arrays and ex
ntional endoscope recording of the phantom colon with computed tomography scan ground truth. To
method which was previously introduced by our group. Next, three most fundamental iMRI device de
ich is time consuming and limits the number of averages. ASL MRI using Look-Locker (LL) readout a
MalFGK2 and lipid-linked oligosaccharide flippase PglK. ANM-LD succeeded to extract the mechani
es to enhance in vitro behavior of target cell types. In the first study, simple and one-step surface mo
ness and electromagnetic fields on neural differentiation are reported in the literature but common for
h image resolution will help to identify more detailed images. SyncBox control system is a novel pater
g methylcellulose (MC), gelatin and bioceramic powder mixture. Initially, three different powder to liqu
ing is possible. This device employs Time Delay Integration (TDI) X-ray detector, a new digital X-ray
y test and cell staining. Gold (Au) layers were deposited on glass surfaces by using photo-lithographi
dicates complexity of the white matter voxel not locally but at macro scales. The findings on phantom
sk, and classified for object type and movement phase. Among three machine learning algorithms (k-
quences of storage lesions on recipients. Therefore, a non-invasive biomedical diagnostic technique s
IO. As part of the thesis, four studies were conducted. First, novel prognostic and predictive compute
than control mice. To our knowledge this is the first study demonstrates the neutralization ability of pr
nt, which is an alternative for jaundice detection and monitoring, is a safe, easy, painless, cost-effecti
urons in anesthetized rats. All drugs increased average firing rates only during vibrotactile stimulation
r determined from Contrast-to-Noise Ratios. The images were resampled. Several automatic segmer
nism. Continuity of muscle fibers and extra-cellular matrix (ECM) is also of relevance. Titin was so far
conducted every year for increasing the efficacy of PDT. Combining different photosensitizers or dev
nufactured by considering many performance criteria including visualization, miniaturization, _exibility
ittance showed positive correlation. Also, it was observed that the reduced scattering coe_cient obtair
t. The aim of this study is to evaluate a new wavelength, 1940-nm thulium fiber laser, in endodontic st
tched with Ratio-vs.-Depth curve which are generated by approximate formulae of continuous wave c
h the CTC parameters of voxels located within and around the middle cerebral artery (MCA). Addition
1470-nm diode laser: a novel method for sutureless amniotic membrane transplantation. This study sh

ıdicate that high reproducibility and agreement with experts are achievable without using DSA. The cc
y biological pathways. Adipose-derived stem cells are promising for use in regenerative medicine and
gating the photothermal effects of lasers and to specify optimal laser parameters in order to propose l
ues recently. Conventional methods for following the healing generally lack of objectiveness and repe
oothing takes place in order to make the data more normally distributed and to diminish the inexact na
ns, where cell bodies are cultured on one side and axons are allowed to grow to the other side throug
ınd trained to detect trains of biphasic charge-balanced current pulses (pulse width: 600 μs, current in
SOD1 protein were analyzed. In this study elicited on Xenopus Laevis oocyte, it is demonstrated that
pairwise interaction effects of the collimator parameters play a key role in determining the set of optim
d muscle and the same parts within BTX-free muscle shortened by 29-27% and 32-29%, respectively
blem is addressed by decomposing the EEG and fMRI data cast as tensors on both common and dis
is true. We also implemented particle filter that approximates the proposal function by the extended K
se of natural neural circuits. In this thesis, we propose a novel, neurally-inspired design approach; the
:tro-optical signal conversion distally (and opto-electrical conversion proximally) at this high frequency
ıt (BOLD) functional magnetic resonance imaging (fMRI) scans of 40 healthy volunteers. Firstly, thala
d theta or delta waves appear. In this study, we analyze EEG changes for phase coupling between de
ght was examined on wild type and resistant strains of Staphylococcus aureus and Pseudomonas aer
:hanical load simulating ischemic compression manual therapy technique in human lower leg in vivo. I
de improved TF resolution. In this dissertation, we consider two strongly non-stationary biomedical sig
: our method on the optically weighted BOLD signals, which are obtained by projecting the fMRI imag
: ac- tivities due to unestimated effects of microemboli. CPFO aperture combined with DCS is a clinica
ı to the applications of BNs to HTBD. In the first facet, a novel method is provided, which models kno
y accepted fiber tract atlas which is the main concern of the various research groups in the field. In th
mplish a complete transition of MRI-guided therapies and treatments from animal experiments to clinic
odel needs to be modeled to show the U-shaped Pacinian channel behavior. Additionally, the spatial s
how “abnormal” mechanical characteristics: (i) Length range was not narrowed and (ii) high flexion for
dings of epileptic EEG, and simultaneously recorded steady state EEG- fMRI. Spatio-temporal wavele
laser system was experimentally tested on ex-vivo brain tissue. The maximum ablation eficiency was
h different NIR wavelengths were delivered to skin incisions via optical bers and laser power was adju
: laser induced AKT phosphorylation. PDT-mediated AKT pathway activation may stimulate cell surviv
follows during neuronal activity and the transient characteristics of the response during stimulus and a
lifferent antenna designs on independent channels. The devices incorporate a loop antenna to visuali
rol (NC) group and three patients with spinal muscular atrophy as SMA group were included. The age
when computations demanding pMRI methods or non-Cartesian trajectories are involved. Even thoug
: model for a two wavelength system. The errors have been found to be higher for thicker fat thicknes
l on a group of patients with dialysis ages less than two years and without any other accompanying di
ın. The proposed modeling method, i.e. the wavelet network modeling, interprets the transient structu
l from a set of cognitive signals show that fNIRS can identify cognitive activity both at the subject and
of an individual lamella is less mineralized, thus more hydrated, indicating that contractions perpendic
: SWOs and its ability to limit the wrist movements. A case-control study was designed. 31 right-hand
urements were taken in four volunteers asynchronously and carefully aligned for comparative analysis
ented breast was generated using a moving mask of 3×3 voxels on the dynamic images. This map w
Another three dimensional dynamic tibiofemoral model which includes the isometric fascicles, aACL,
posure environment for plane wave conditions of far-field free space EM field propagation at the GSM
se calculated with the treatment planning algorithms that presume the head as a homogeneous medi
4oC, on day 0, 10, 21, 35 and 42. On whole blood (WB) samples (31 samples) under 21 days of stora
hem take only the effect of the rsna on renal vascular resistance into account. In this dissertation, a lo
(RBF), nonlinear auto regressive moving average modeling (NARMAX), neural networks, automatic o
ɔtion mechanisms are invaluable to understand human vision, they are also increasingly used and imp
hem. Adequacy of a hemodialysis treatment was decided according to Kt/V using Daugirdas-2 formul
ɔ yield satisfactory results in dealing with recording problems such as stimulus artifact, test duration, a
the contribution of one component of this circuitry, the superficial layer, to the generation of EPSC bu

e scope of this thesis proved that precordial bubbles can form during the ascent from sea level to 20(rom reagent grade fine chemicals and some porous structures were prepared. Implant prototypes pre ding capacity and efficiency. In the in vivo implantation tests performed on the rat abdominal wall, the diagnostic aids. This research is a case in point that it advances and investigates various signal proce ancellation process an auxiliary sound channel is also included in the recording system. Clinically valu acing the single trial variabilities of the EPs during a recording session. The wavelet transform is appli es as an epileptiform field activity in magnesium free medium, representing NMDA receptor mediated n tests and at the same time to reduce the time required for analysis of the respiratory data. However,

ent the development of a compact and easy to use non-contact radiometric temperature measuremen
ctrode contact. The study assessed modifications on both undifferentiated and differentiated neurobla
nplitudes, and an economic algorithm minimizing sEMG input was sought. For the sake of different ar
particles were introduced into CPCs at concentrations of 0.02, 0.04, and 0.1 wt/v%. The addition of Fu
et. The aim of this PhD research was to develop an efficient antimicrobial therapy via the combination
device technologies that could improve the success of MR-guided biopsy procedures are introduced
were developed by conjugating Paclitaxel (PTX) to PAPBA/platinum (Pt)-nickel (Ni)/ Pt according to d
mented with DTI tractography, registration-based fiber direction deformations and principal strains on
s for visualization of raw 1H-MRSI data and LCModel outputs, chemical shift correction, tissue fraction
e titin-I and II limits sarcomere shortening (lm = 32.7mm: up to 10% and 20%, respectively). Such sho
teraction between muscle fibers and extra cellular matrix, loading effects imposed by KT are likely to l
26%), and epimuscular myofascial force transmission (EMFT) arising from intermuscular mechanical
re. In this thesis the antibacterial properties of sharkskin mimicked polymeric membranes in static cor
orating ICG for phototherapeutic or imaging purposes are reported in the literature. However; these sy
ace designs. UCNP's unique anti-Stokes conversion capabilities enable the transmission of near-infra
nany limitations. The main goal of the thesis is to use Bayesian models to understand sensorimotor pr
nsing electrodes are over the hands, fc correlates with lumbar BMD (r = 0.580; P < 0.05), and fcut is
ease was caused by the most difficult task. The last auditory experiment assessed the frontal cortex l
is not able to provide contrast di erence between healthy tissue and lesion. For this reason, biopsy s
arietal control, default mode, dorsal/ventral attention, visual, limbic and somatomotor networks in line
xperiments were performed under fluorescent microscopy. The evoked activity was monitored througl
verify the applicability of this data for use with real clinical systems, we recorded a video sequence w
esigns including a 20 G active iMRI needle, a 0.035" outer diameter metallic active iMRI guidewire and
nd the time-encoded pCASL MRI (te-pCASL) using Hadamard matrix are two approaches for acquirir
stic differences among these transporters while predicting fluctuations and allosteric couplings of Btu
dification of PDMS is successfully accomplished by the preparation of amino acid (histidine, His; and
both is a lack of understanding how these biophysical factors interact with cells. The overarching goa
nted idea, that helps to integrate X-ray device components more easily and securely. Syncbox will hel
uid (P/L) formulations were adjusted to investigate the chemical structure, rheological characteristics,
sensor design, with higher resolution and sensitivity in comparison to conventional flat-panel detector
c technique and plasma enhanced chemical vapor deposition. Graphene oxide (GO) was immobilized
n data demonstrate sensitivity of the proposed measure to the tuning parameters and show its range o
Nearest Neighbour, Multinomial Logistic Regression and Support Vector Machines), highest classifica
should be developed for the quality of each stored ES, before administering them to especially criticall
ed tomography (CT) radiomic features utilizing radial gradient and radial deviation maps were created.
oposed drug in in-vivo models. The second aim of this dissertation was to develop combinatorial appr
ve and fast method as well as being noninvasive. The application of TcB measurement uses visible fi
, and increased entrainment as measured by the vector strength of spike phases. The results sugges
ntation algorithms were tested on three datasets: phantom, simulated geometric lesions inserted in re
considered as passive spring of sarcomere, a view now changing due to its altered properties in activ
eloping new nanoconjugations for better targeting are some of the strategies. Apart from monolayer c
and safety. In this thesis, clinical grade biocompatible polymers and metals were used to manufactu
ned using an inverse adding- doubling method showed a negative correlation with temperature, but th
tudies and finding optimum parameter ranges for an antibacterial efficiency while protecting the healtl
li_use re_ectance. The error due to approximation and the error in depth assessment are studied for
ally, it enabled us to identify the voxels that meet the AIF criteria and those with distorted CTCs. The
howed a new method for laser welding of a tissue to contact lens for ophthalmologic application. Corr

ombined use of high temporal resolution 4D ASL and high spatial resolution and vessel-to-backgroun
l promoting their osteogenic differentiation would be used in improving bone tissue healing and regen
lasers in clinical use. In the present study, ablation/vaporization capability of three different infrared la
atability. Thus, a new non-invasive, repeatable and cost effective method was needed. The aim of thi
ature of the nonlinear registration. Finally, voxel-wise statistical operations are performed between the
h microchannels that connect the two fluidically isolated compartments. First, regenerative effects of
ntensity: 20-200 μA)(ICMS). They further tested in psychophysical experiments and psychometric curv
: the A4V mutation confers a propensity to hyperexcitability on a voltage dependent sodium channel (
nal parameter. As a result of optimization, a considerable improvement of up to 73% in CNR with resp
'), (ii) enhanced potential of active force production of the non-paralyzed muscle parts (up to 14.5% fo
criminant subspaces and computing the common spatial profile from the data on the cortical surface.
Kalman filter. We compared Gaussian type approximated estimation techniques like extended Kalman
BMI controller consists of spiking model neurons and receives simulated synaptic inputs from extrac
. Amplifying and frequency down-converting the MR signal at the catheter tip could minimize signal lo
umo-cortical loop of the visual system is the subject of interest. Our findings prove that high correlatio
elta and alpha sub-bands using a new algorithm for depth of general anesthesia (DOA) measurement
ruginosa in vitro. Indocyanine green concentration and laser dose were initially optimized for wild type
In healthy subjects, global length changes of gastrocnemius muscle-tendon complex were shown to c
gnals, lung sound and blood-flow signals, and propose novel and effective systems for the detection o
e onto optical measurement space by use of the optical forward problem. The performance of ESSR
al problem where bubble analysis is managed manually by special and trained cardiologists. Even this
wn biological pathways as BNs, and uses given HTBD to find pathways that best explain underlying i
his thesis, the special class of artificial neural networks (ANN) namely Kohonen's self organizing featu
c applications, some challenges need to be overcome. Chief among them is the fact that MRI-guided
summation property of the P channel was demonstrated on fingertip at three different contact location
rces were not available. Such abnormality occurred if its antago- nist vastus medialis is activated simu
et decompositions using realistic head models are applied in order to produce simple stationary input
s obtained at a power level of 200 mW with duration of 10 seconds (69 W/cm2). The fluence effect fo
usted according to predosimetry studies. In dosimetry experiments all the three NIR lasers were teste
val in remaining tumor tissue leading to tumor reoccurrence, therefore, inhibiting PDT-mediated AKT a
after stimulus periods. We have modified recent models of neurovascular coupling adding the effects
ze the tip and determine orientation, and a dipole antenna to visualize the whole guidewire shaft. The
e of the subjects ranged between 22 and 46. Five to eight measurements were performed from the bi
gh signal-to-noise ratio (SNR) can be relatively high during real-time imaging, spatial resolution is limit
sses. A correction algorithm was proposed with the use of wavelength dependent partial path length i
sease. Microscopical studies performed on virgin and used dialysis membranes showed morphologic
re of crackles in the time-frequency space with a small number of components using the time-localiza
group levels. The analysis suggests that mixed or Bayesian hierarchical models are especially conve
cular to lamellae are due to the presence of more water-filled rather than mineral-filled channels within
ed volunteers participated in the study. 12 of them were patients with CTS, and the others were healt
s. In order to describe the main stimulus in BHT, partial pressure of carbon dioxide (PaCO2) paramet
as converted into a binary form and processed with a fuzzy CNN consisting of three layers of 11×11 c
aPCL, aMCL, dMCL, and the medial-lateral articular surfaces were represented as the constraints to
M Base Transceiver Station (BTS) frequency of 945 MHz and effects on oxidative stress in rats were i
a. Two experiments were designed to investigate the inhomogeneity effects in the Gamma Knife radi
age, same measurements are done on day 0, 10 and 21.Electrical measurements are performed in th
ong-term cardiovascular system model is presented that integrates the previous models developed by
rder determination and maximum likelihood adaptive neural systems (MLANS). The use of radial bas
proved by robotics and artificial intelligence researchers to achieve human- like performance. In a sim
la. Delivery of Kt/V of 1.2 was accepted as target value. Performing Analysis of Variance (ANOVA), d
and noise reduction. In the first phase of the study, data are collected from normal hearing subjects, f
ursts. Applying single, brief stimuli to the superficial layer of rat collicular slices evoked prolonged EPS

)0-m. supporting a far lower threshold for altitude DCS then the model outputs. Following three pione
epared from titanium rods, were coated with HA powder using a plasma coating unit. The HA produce
alternating sliding knots with different patterns were found to be more efficient and secure than the c
essing and classification techniques for an intelligent stethoscope. Firstly, for diagnostic purposes, a r
uable correct classification rates are reached by using the AR parameters as feature vector for two ob
ed to the averaged and single trial EPs for the time-frequency analysis of the oscillations occurring in
extracellular activity ,2. thin hippocampal slices with patch-clamp technique as an effect on the NMD
, as such an approach by itself does not evaluate the gas exchanging function of the lung, in addition

ıt and laser control system based on a commercial, inexpensive IRt/c sensor. This thesis study establ
astoma SH-SY5Y cell lines. Successful modifications demonstrated biocompatibility with cell viability ı
mputation level compatibility, a practical algorithm was aimed to limit the use of lower leg muscles. In
ul at the highest concentration to CMC/Gel cements leaded to a decrease in setting times, attributed t
of PDT and SDT. For this purpose, IR780 iodide loaded mesoporous silica nanoparticles were synth
and tested. First, a novel optical fiber force sensor was designed and implemented into a needle to p
lemonstrate their efficacy in smart drug delivery with catalytic propulsion. Controlled drug delivery was
NVTs characterized the myofascial loads in relation to the strain heterogeneity pattern in active musc
ı calculation, metabolite map production, and registration onto standard MNI152 brain atlas while prov
ɔrter sarcomere effect characterizes active state titin's mechanism of effects. Integrated models show
be distributed to deep muscular fascia via force transmission. This thesis aims to address these effec
interactions significantly increases active forces (up to 132%). Combined with musculoskeletal mode
ıditions, with and without the aid of antibacterial and bactericidal chemicals was studied. The aim was
ystems mostly contain other therapeutic agents as well, making it difficult to assess the effects of ICG
ared (NIR) to visible light, providing a solution to the light penetration depth problem of traditional PDT
rocessing and develop a novel approach for future BCIs. Specifically, spike data were collected from a
32.4 kHz. BMI also affects BIS measurements, and if BMI < 30 kg/m2, the correlation of fc with the hi
hemodynamics with functional near-infrared spectroscopy (fNIRS) and showed that the left hemisphe
samples are taken statistically from di erent regions of the prostate. On the other hand, magnetic resc
with the broad seizure onset and propagation pathway. We mostly found a significantly reduced funct
h calcium transitions and the analyzed results revealed the network connections. Next, the network co
ith a state-of-the-art colonoscope from a full representation silicon colon phantom. Additionally, we pr
d a 6 FR, MRI-safe, metallic braided catheter were successfully introduced to expand interventional ca
ng ASL data at multiple TIs. ASL-MRI with LL readout requires a complex model to accurately estimat
CD residues in agreement with previous experiments and observed FRET intensities. The dynamicall
leucine, Leu) conjugated self-assembled monolayers (SAMs) for enhanced osteoblast proliferation, m
al of this thesis is to reveal new clues about the effect mechanism of these factors on neural differenti
p researchers to build up new, customizable devices faster, and it could begin a new developmental a
handling, mechanical and in vitro degradation properties. Then, the effect of graphene oxide (GO) inc
s. This thesis introduces a software platform to build customizable X-ray scanners and its first implem
d on Au electrodes through self-assembly mono- layers (Au/GO). Hydrazine vapor reduction process v
characteristics. The findings on the real data demonstrate that proposed macro-structural dispersion i
ation accuracy was obtained with k-nearest neighbor classifier and the results were promising for the s
y ill patients. Transparent thin plastic blood bags allow optical measurements. Diffuse reflectance spe
. One feature, RD outside-border SD, was found to be associated with overall survival in two indepen
roaches have potential to be used in the clinic for patient benefits. This includes neutralization oftumo
eld reflection spectroscopy to determine the level of jaundice in newborns. The aim of this thesis is to
st that three inhibitory factors shape the spike responses of the neurons. In a different experiment, we
al images, and simulated clinical images with real heterogeneous tumors for which ground truth was k
ve state. Yet, muscle fiber–ECM interaction can further change titin’s influence. This thesis aims to ad
cell cultures and in vivo animal models, another important tool for testing new cancer treatment strate
re clinical grade MRI compatible RF markers. Proposed RF marker was deposited on a non_planar b
ere was no statistically signi_cant change in absorption coe_cient. The e_ect of such optical property
h of root canal and paradontal tissues. This thesis study consists of preliminary and main experiment
di_erent cases revealing favorable source-detector placements with respect to planar position of the
literature has developed the following criteria for selecting AIF: high peak height (PH), small full-width
neal welding is rather a new application area in laser medicine, and few studies reported successful w

d contrast 4D CE-MRA provided sufficient spatiotemporal angiographic information for the delineation
eration. The effects of PBM at two different wavelengths with three different energy densities on hum
sers operating at 980-nm, 1070-nm and 1940-nm were investigated through comparative experiment
s study was to investigate the laser photobiomodulation on wound healing and monitor the healing pr
groups of the images. As revealed in several studies, changes in these steps and changes in their p
members of the glial cell-line derived nerve growth factor (GDNF) family of ligands (GFLs) were inves
ves were obtained for ICMS detection as in vibrotactile experiments. The psychometric data collected
Nav) mediated by heightened total Na+ conductance and a hyperpolarizing shift in the voltage depen
pect to the reference collimators is achieved. Moreover, the critical region for detectability shifted towa
or BTX cases), and (iii) decreased muscle length range of force exertion. It is shown that intramuscula
The Granger causality analysis of brain connectivity is reformulated on tensor space enabling incorp
filter (EKF), unscented Kalman filter (UKF), cubature Kalman filter (CKF) as well as stochastic infere
ellularly recorded neurons. The controller therefore forms a hybrid biological/in silico neural network w
sses. Amplification could be achieved with an LNA placed next to the microcoil. To provide the refere
n between the frequency response characteristics of the lateral geniculate nucleus (LGN) and the prin
based on complex wavelet transform in patients anesthetized through total intravenous anesthesia (T
strains. After determining most effective concentrations with specified light dose, they were applied c
cause sizable and heterogeneous local principal strains and fiber direction strains within the all muscle
f crackles from the former and emboli from the latter. The crackle detection system uses the dual tree
method in removing physiological artifacts is compared to i) a global signal regression (GSR) method
s problem was considered recently by different groups within sound, image and video forms, an auton
nteractions. During this process, biological pathways are converted to directed acyclic graphs, and a s
re maps (SOFMs) is proposed for the analysis of DT images. This SOM based tractography approacl
interventional procedures remain limited by a lack of availability of MR-compatible interventional instr
s and at three contactor sizes. The effects of skin mechanics on psychophysical thresholds of the P c
ultaneously. Therefore, EMFT mechanism through inter-antagonistic interaction was suggested to det
subtopographies for the source localization. Besides, a spatial decomposition method based on radia
r skin ablation was analyzed by histology on Wistar rat skin tissues during a 4- day healing period. Te
d for their efficacy in welding; besides, 809 nm diode laser was also tested for its efficacy in laser solc
activation may improve treatment responsiveness. Our findings demonstrated that, minimally toxic AK
of both nitric oxide (NO) kinetics, a well-known neurogenic vasodilator, and CO2 kinetics as a metabc
MRI visibility performance and RF safety tests were performed at 1.5T in vitro and in vivo in swine. T
ceps brachialis muscles of each subject. Data including 113 measurements in total acquired from with
ed. Thus, improved visual feedback during real-time MRI guided interventions is a must. This thesis c
n the muscle layer derived with Monte-Carlo simulations. Two detector cw-NIRS system was also ana
al changes during dialysis session. Mechanical tests revealed the differences in the mechanical prop
ation property of wavelets. In modeling analysis, complex Morlet wavelets are selected as transfer fun
nient for fNIRS signals. A related problem that is discussed in this thesis study is to relate the outcom
the mineralized collagen fibril arrays. As these channels are also aligned with the crystal planes, the
hy subjects. Function, dexterity, and strengths were measured under three different testing conditions
er was integrated into the balloon model as the driving function of cerebral blood flow (CBF) which lec
cells to segment out lesions from the surrounding tissues and to filter-out deceptive enhancements. A
predict the trajectory of the tibia on the femur during flexion. The tibiofemoral model was also integra
nvestigated. Groups of young adult male Wistar albino rats were kept inside the test chamber for 7 hc
osurgery: one experiment simulating the volume near the auditory canal cavity and, the other simulati
ne frequency range from 100 kHz to 1 MHz at room temperature. Multifrequency complex impedance
Guyton, Uttamsingh and Coleman. Additionally it introduces mechanisms of direct rsna effects on tu
is functions and nonlinear auto-regressive moving average methods in the background make this esti
ilar attempt, we propose a new and complete model of active vision behavior, based on confirmed bic
ialyzer, haematocrit, pump speed and socio-economical status were found to have direct influence or
rom different age groups, using the conventional data acquisition system in the clinic of the Marmara
SC bursts that were similar to those previously described in the tree shrew. These EPSCs were suffici

ering altitude diving expeditions to 2200, 3412 and 3980-m, a set of no- decompression stop (no-d) lir
ed by this method has been demonstrated to have the potential to become a superior graft material in
lassical sliding knots. The knot configuration, postoperative period, suture material and size were imp
nulti-stage signal classification and decision fusion scheme has been developed. This scheme signifi
ojective classifiers, namely a two-layer perceptron and the K- means classifier. The second heart sour
different frequency bands of spontaneous EEG. The relation between EEG and EP activity is observ
A components of excitatory postsynaptic currents. The extracellular activity evoked by the stimulation
to spirometry, the system designed to incorporate monitoring the partial pressure of inspired and exp

lishes the validity of my design that potentially makes temperature control more accessible in clinical e
results, and notably, surfaces modified with NCAM and N-Cad/NCAM outperformed traditional poly-L-
this context, neural network-based algorithms with timing-based approaches utilizing sEMG amplitud
to enhanced hydrogen bonding facilitated by the hydroxyl groups of Ful. In vitro studies focusing on re
esized, and their antimicrobial photodynamic and sonodynamic potentials against gram-positive Stapl
rovide feedback on the axial force applied to the needle tip during MR-guided biopsy operations. Acc
s achieved by inducing Near-Infrared irradiation (NIR) and altering the pH. Drug release and interactic
cle (proximally shortened (up to 22%), distally lengthened (up to 108%) fascicles). Inter-subject deviat
viding automatic spectral quality control, is presented. Oryx-MRSI implements region of interest analy
ed that the shorter sarcomere effect becomes an inconsistent and variable mechanism: Shorter sarco
ts by tensiomyography (TMG) and combination of Magnetic Resonance Imaging (MRI) based deform
ls developed based on gait analysis data, EMFT effects were shown to be compatible with metrics ch
s to understand the adhesion behavior of both bacteria and mammalian cells onto the biomimicked po
alone. Hence, this study was aimed to explore the impact of only-ICG encapsulating polymeric nanop
. Since they have organic structure, UCNP do not show high biotoxicity and additional surface modifi
awake behaving rats during psychophysical yes/no detection task. Within a Bayesian framework, task
p BMD is improved (r = -0.456; P < 0.05). fc may be alternatively calculated using the proposed origir
re was active throughout the experiment, while the most difficult task caused the most widespread ne
nance imaging (MRI) can help to distinguish lesions from healthy tissues. Therefore, the optimal way
tional connectivity in bilateral frontoparietal control, somatomotor, default mode and ventral attention r
onnections determined by analysis were confirmed by immunostaining that showed connections physi
opound Endo-SfMLearner, an unsupervised monocular depth and pose estimation method that comb
ardiovascular MRI applications. Electromagnetic simulation tools were employed to optimize the devic
te CBF. On the other hand, te-pCASL MRI has a shine-through effect, which might cause errors in CE
y key residues enabling the sampled transition were defined as functional residue networks and their
norphology, alkaline phosphatase activity and mineralization. In the second study, PDMS substrates w
iation. Towards this end, three different in vitro neural differentiation models were used in a mechanis
and even an industrial standard for X-ray imaging. Keywords: Medical Imaging, Open Source Hardwa
corporation investigated by analyzing their physicochemical properties and in vitro responses. Results
nentation in a device with TDI detector. The software solution for TDI based full-body scanning involve
was performed in order to obtain reduced graphene oxide (rGO) surfaces (Au/rGO). Au, Au/GO and A
nformation is found to be significant for discrimination of the schizophrenia and the bipolar patients fr
subsequent work. In the second part, the sensory feedback system was designed using two vibrotact
ectroscopy (DRS) can be utilized for rapid and non-invasive evaluation of stored blood quality. The pu
dent NSCLC cohorts. Second, clinical-radiomic models that predicted RDP phenotypes, including hyp
racidityinordertoimproveimmunotherapyresponseswithL-DOS47currently in clinical trials and well toler
design algorithms which can determine the level of jaundice by nonlinear approaches using diffuse r
electrically stimulated Basal forebrain (BF), the main source of cortical cholinergic inputs, of anesthe
known. The volumes of the tumors were 0.49-26.34 cc, 0.64-1.52 cc, and 40.38-203.84 cc respective
ldress these by MRI image registration, DTI and FEM. MRI analyses of KT showed principal tissue str
gies is an advanced in vitro model that mimics certain physiological factors in tumor microenvironmen
iocompatible catheter surface by physical vapor deposition (PVD) technique using cylindrical laser_cu
changes on the light propagation was displayed by Monte Carlo simulation. As a result, optical prope
parts. Initiatory experiments were done in order to learn and practice in oral microbiology and laborat
defect. The e_ect of lateral displacement of the source with respect to defect is studied. A strategy to
n-at-half-maximum, (FWHM), early time-to-peak (TTP), and early arrival time (AT). However, it has be
elding dose for different infrared wavelengths. Full thickness, oneplane 3.2 mm long clear corneal cu

ı of AVM niduses. Another application of 4D ASL is the testing of arterial input models which are used
ıan osteoblasts and osteogenic differentiation of adipose-derived stem cells were investigated in this p
s. All studies were performed ex vivo followed by in vivo with real-time temperature monitoring and m
ocess in-vivo by means of multi-frequency electrical bioimpedance measurements. Photobiomodulate
arameters might influence the resulting statistics. Although some short guidelines exist for conducting
stigated in a microfluidic physical injury model and GDNF was most potent in promoting axon outgrow
from vibrotactile and ICMS experiments were fitted with surface functions using the stimulus intensity
dence of Nav 1.3 activation. To estimate the impact of these channel effects on excitability in an intac
ards the direction of smaller lesion diameter and lower tumor-to-background ratio. Another conclusion
ar myofascial force transmission is central to these effects. Additionally, experimental results showed
oration of tools developed in that area of research. The first approach on this analysis facilitated tens
nce techniques like standard particle filters (PF) and auxiliary particle filter (APF). Filtering makes the
with the neuronal circuits of the user's brain. In order to fulfill the challenging real-time requirements of
ence signal to the mixer for frequency down-conversion of the amplified MR signal, an outside generat
nary visual cortex (V1) supports the oscillatory tuning property of the thalamo-cortical interactions. Se
TIVA) by Propofol. By taking bispectral index (BIS) values as reference we calculate entropy and histo
on resistant strains. This method was totally efficient to kill these strains and optimum doses varied wi
es of the limb. It was concluded that EMFT has determinant role in human muscles that affects the me
e complex wavelet transform (DTCWT) for denoising and time-frequency/scale analysis with various w
l and ii) a superficial signal regression (SSR) method. The retrieved signals from each method are co
nated tool is considered as a challenge due to algorithmic and mechanical constraints related to noise
score measuring fitness of the observed HTBD to a given network is calculated. Statistical significanc
h called SOFMAT (Self- Organizing Feature Mapping Tractography) relies on unsupervised learning r
uments. In this study, the main goal is to close the gap between investigational studies in animal and
channel were studied by measuring mechanical impedance. A significant correlation was found betwe
ermine human muscle characteristics in spasticity. Effects of treatment methods were investigated in
l basis functions is used. The usage of the subtopographies facilitate the inverse solution and it is sho
mperature measurements by thermal camera and thermocouples were investigated to see the tempe
dering. Effects of 980 nm laser welding at same energy but different irradiation levels were also comp
T inhibitor, PI- 103, e actively inhibited PDT-mediated AKT phosphorylation both in vitro and in vivo. T
olic vasodilator to test the neurogenic and metabolic hypotheses. Using 2-photon microscopy imaging
The two channel active guidewire design provided accurate tip position information with 0.97 0.42 mm
n these measurements were stored in a computer and then were used to construct 3-D maps of MU t
defined three specific aims to improve real-time imaging: (i) real- time image reconstruction for pMRI,
ılyzed and compared with 1-detector cw- NIRS system. The performance was promising but true assu
erties of virgin and used membranes. The change in the degree of crystallinity of the polysulfone and
ctions in the hidden nodes due to both their similarity with the crackle waveforms and their exibility in
ne of the statistical analysis with the underlying physiology. This problem is studied by putting constra
crystal arrays facilitate or hinder contraction in different directions. The mineralized collagen fibril arra
s: without orthosis, with a SWO, and with the NeO system. Standardized test instruments and test pro
d to the development of an expanded balloon model (EBM). During BHT, the increase in HbR was obs
, set of decision rules based on volume and 3D eccentricity of the suspicious regions were applied to
ted in to the dynamic patella-tibio-femoral model. The behavior of the knee model was also tested by
ours/day for a period of 8 days. When EM fields producing Specific Absorption Rate of 11.3 mW/kg(p
ng the volume near the paranosal sinuses cavity. In the auditory canal cavity experiment, an identical
data are fitted to Cole-Cole diagrams using Least Mean Square algorithm to give Cole-Cole paramet
bular sodium reabsorption and renin secretion in accordance with experimental data from literature. T
imation process very effective. The success of the model has been demonstrated in experimental stu
ological evidence where available. The model consists of an attention system, temporal image sequer
n the treatment quality, while dialyzer-interdialytic weight difference, dialyzer- haematocrit, dialyzer-pu
University Audiology department. Normal features of the TEOAE signal among age groups are statis
ient to elicit bursts of action potentials that lasted as 300 milliseconds. To examine the contribution of

nits for 3500 m was calculated using linear extrapolation of US Navy M values decreased by 4 feet of
veterinary orthopedics. Plasma spraying studies agreed with the results in the literature. Pathological
ortant factors in determining the knot holding capacity. From the biological perspective, these new kn
cantly improved the classification performance by having on one hand two-tiered decision mechanism
nds are decomposed into damping sinusoids by using forward prediction, and a correlation between th
ed as an amplitude enhancement and a phase alignment of otherwise randomly phased oscillations i
of Schaffer collateral-commissural pathway was recorded from CA1 stratum pyramidale and stratum
ired oxygen via two additional parameters, defined in this work, to give the user an insight into the co

environments. I have shown the ability of this system to maintain tissue temperature at a set value ov
-lysine (PLL) coatings in supporting neurite growth. The subsequent part of the study also included a
es as inputs have been developed to (1) predict sagittal ankle position and moment during ground-lev
eactive oxygen species (ROS) scavenging demonstrated the antioxidant activity when Ful was incorp
hylococcus aureus and methicillin resistant Staphylococcus aureus, and gram-negative Pseudomona
urate force mea surement, differentiation of different tissue types via stiffness detection capabilities,
on of PAPBA-enriched nanomotors loaded with drugs were studied using MCF-7 breast cancer cells.
ions from the general pattern were in agreement with subject specific anatomy. 2) A multiverse analy
sis at brain parcellations defined on MNI152 brain atlas. All generated metabolite maps are stored in
omere effect is further enhanced for proximal fascicle interfaces (by 30.2% and 31.0%, respectively) v
ation and Diffusion Tensor Imaging (DTI) based fiber tracking analyzes. TMG analysis revealed that
aracterizing patients' pathological gait, indicating that intermuscular mechanical interactions may be a
olymeric membranes and how the surface topography affected these properties. Moreover, the impact
particles as a phototherapeutic agent. Poly(lactic acid) nanoparticles produced via a single-step nano
cations allow photosensitizers delivery to the desired region of a body. In this study, Yb/Er doped UCN
k-related priors, posterior beliefs, and the objective function to match the observed choice of the anim
nal 3P-Nyquist method. Both fc and the phase angle of the impedance measured at a single frequenc
euronal activity. A visual discrimination task revealed a greater temperature increase in the right ear co
to perform prostate biopsy is to perform it under MRI guidance in order to eliminate accuracy concer
networks with an implication of dysfunctioning in attention, long/short term memory, cognitive f
ically. The results obtained illustrated that the dorsal root ganglion nerve cells could establish connect
ines residual networks with a spatial attention module in order to dictate the network to focus on distin
ce radio frequency (RF) antenna geometry for optimal device visibility, and to assess RF-safety of iMR
BF estimation. In the first part of this thesis, the brain perfusion deficits in Parkinson's disease with mil
estimated perturbation response were highly agreeable with the functional assays of the BtuCD muta
with healthy myocardium-like stiffness are produced and modified with conventional [(3-aminopropyl)tr
tic investigation. In the first segment, the results highlight a novel, integrin-independent and bi

s showed that the elastic modulus was increased up to 6.89 ± 2.25 MPa from 1.72 ± 0.76 MPa with th
es novel ideas and approaches which improve the device performance in terms of the applied dose, q
Au/rGO surfaces were examined through SEM images and water contact angle measurements. Thes
om the healthy controls, especially when the frontally associative bundles such as cingulum and inferi
ile actuators and a user-specific calibration method was presented. The actuators were placed on the
rpose of this study is to create models for predicting the hemolysis level or free hemoglobin (FHB) co
erprogressive disease (HPD), were created in the setting of NSCLC IO. Among 228 NSCLC patients
rated. We have demonstrated in-vivo that L-DOS47 treatment is effective to promote survival when co
eflection spectra obtained from a specially developed device. In order to achieve this, TcB and TSB n
tized rats while recording single-unit (n=87) spike activity in the SI cortex. The vibrotactile responses
ly for the three datasets. The widely available software tools MATLAB, MIPAV, and ITK-SNAP were u
rains deviated from KT loading direction. By DTI tractography and MRI analyses combined, muscle fib
nt. These factors include cell-to-cell interactions, hypoxic environments and some mechanical stresses
ut shadow masks, which kept the overall device pro_le low. The presented fabrication approach is hig
erties can change with temperature and this change must be taken into account for safer laser applica
ory protocols. Main part of this study has preliminary analyses for determining the optimum irradiation
overcome errors introduced by erroneous prediction of background medium optical properties is sug
en found that high PH and small FWHM may indicate a shape distortion due to partial volume effect
ts were done using a pre-calibrated knife. Laser power and irradiation duration were the parameters u

l for blood fow quantification in ASL perfusion studies. The accuracy of quantified parameters (blood f
resent study. Another purpose of the study was to associate the possible biostimulative effect of ligh
ale Wistar rats were used as an animal model. Animals were sacrificed immediately after the stereota
ed in-vitro cell proliferation examinations were followed by in-vivo experiments on cutaneous skin wou
g the processing stages, this thesis tries to explain each main step and gathers the discussions in the
th after axotomy. Next, the first high throughput compartmentalized microfluidic platform (HTCMP) is
and frequency. Psychometric correspondence functions (PCFs) were constructed based on the psyc
t neuron, these changes were simulated in the program NEURON; this shows that the changes induc
of the study is that the optimizer adapts itself to the spatial resolution/sensitivity trade-off as the lesio
diminished epimuscular MFT and intramuscular collagen increase. Due to information on the loss of i
or methods for sparse representation of the connectivity patterns whereas the second method resolve
estimation of the hidden states and the parameters less reliable compared with the algorithms that u
f the present design approach, we first developed the Bioinspired Model Development Environment (B
tor or on-chip oscillator could be used. Both methods have their disadvantages like increased comple
condly, contribution of oscillations in the modeling of hemodynamic response is discussed based on
ogram of modulated signals.Entropies correspond to different BIS intervals using Mann-Whitney U tes
ith different strains. Later, this method was examined on rat excisional and abrasion wound models. V
echanical characteristics of synergistic and antagonistic muscles as changing heterogeneity of fiber le
windows/wavelets for feature extraction. The emboli detection system processes forward and reverse
mpared with the neural signals that represent the "ground truth" brain activation cleaned from cerebra
e, monitoring and probe localization. We aimed to develop a spatio-temporal methodology for clinician
e of these scores is assessed by "randomization via bootstrapping", and relevant pathways are identi
method for the mapping of high dimensional data into a 1D, 2D, or higher dimensional data space dep
clinical applications. First, an MRI-compatible active guidewire for a clinical application was designed
en the thresholds and the dynamic modulus of the skin. Conventionally, somatosensory evoked pote
animal experiments: (1) Muscle lengthening surgery was shown to a ect (i) proximal and distal sides
own that even the temporally correlated EEG sources can be localized by this approach. Integration o
erature effect of CW and modulated mode of the Tm: YAP laser under skin and on skin surface. The t
ared. Throughout this period, healing was inspected at particular days (1, 4, 7, 14, 21) by histological
These results have great importance in relevance to development of combinatorial therapies using PD
, we measured the vessel diameter changes in vivo in somatosensory cortex of Sprague Dawley rats
and novel active shaft visibility technique was introduced to polymer based guiding catheter successf
erritories. All three groups were compared in pairs by using 113 measurements with Student's t-test.
(ii) real-time image reconstruction for non-Cartesian trajectories, and (iii) fast MRI post-processing fo
umption of initial optical coefficients of the layers poses a challenge for the performance. Muscle meta
polyamide membranes during dialysis was observed under X-Ray Diffraction (XRD). It was found tha
the modeling process. Clustering analysis of crackles probe the discrepancies found among the studi
ints over the parameters to be estimated. Carrying the problem to a Bayesian framework, the constra
ays, laid down in the form of primary circumferential lamellar bone are replaced with secondary osteo
ocedures were used for all measurements. Maximum angles at each direction were recorded while the
served later than the BOLD peak and coincided temporally with its post stimulus undershoot. Further
minimize false-positive detections. The system was tested on a dataset consisting of 7020 MR mamn
simulating dynamic and static clinical tests such as knee extension exercise and drawing test. The pa
ower density 3.67 Watt/square-meter), which is well below current exposure limits, were applied, MD/
balloon of a diameter of 16 cm with two corks placed on each side to represent the air cavities const
ers for the equivalent electrical circuit model of blood samples. Variance analysis (ANOVA test) is use
he resulting mathematical model constitutes the first long- term model of the cardiovascular system a
dies with both synthetic and real data. The s-EP estimation technique developed has also been used
nce processing algorithms and an integrative visual memory. All components of the model are implem

tically analyzed, then compared with time varying spectra obtained from parametric analysis. The follo
neurons within the superficial layer to production of the EPSC bursts, we determined how these

f sea water. This is a new method of altitude adaptation (NLHE, Nonlinear Hypobaric Extrapolation). T
l results of the animal studies have been affirmative. For animals nuclear bone scintigraphy studies w
ots provoked tissue reaction similar to the classical sliding knots. Because nylon is less pliable than s
n rather than a single stage classification and on the other hand by combating the non-stationarity of r
he systolic blood pressure in the aortic root and parameters of the damping sinusoids is investigated.
n the spontaneous EEG. A selective averaging method is proposed based on these findings. The wa
radiatum The NMDA components of excitatory currents evoked by glutamate in the CA1 region of ra
ndition of the lung as a gas exchanger. These parameters are calculated from measured quantities a

:y are a function of the same impedance model

ants on these sites (25 out of 26 mutants fu

JME groups were found similar to SMA group

abolism, fatigue and endurance was examined

nograms in 1170 slices from 39 patients with 37