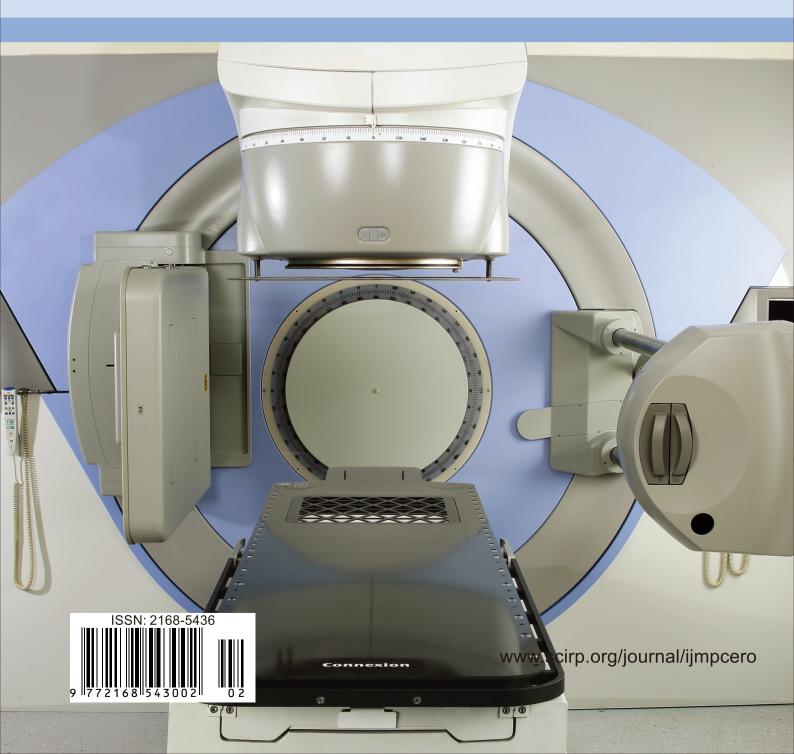


# International Journal of Medical Physics, Clinical Engineering and Radiation Oncology



## **Journal Editorial Board**

ISSN 2168-5436 (Print) ISSN 2168-5444 (Online) http://www.scirp.org/journal/ijmpcero

**Editor in Chief** 

Dr. Qinghui Zhang	Memorial Sloan-Kettering Cancer Center, USA
-------------------	---

#### **Associate Editors in Chief**

Dr. Huan Giap	Scripps Proton Therapy Center, USA
Dr. Xiao-Feng Li	University of Louisville, USA

#### **Editorial Board**

Dr. Wolfgang Werner Birkfellner	Medical University Vienna, Austria
Dr. Maria F. Chan	Memorial Sloan-Kettering Cancer Center, USA
Dr. Zhen Cheng	Stanford University, USA
Dr. Ali Cahid Civelek	University of Louisville Medical Center, USA
Dr. Indra Das	Indiana University, USA
Dr. K. J. Maria Das	Sanjay Gandhi Postgraduate Institute of Medical Sciences, India
Dr. Song Gao	University of Texas, USA
Dr. Mostafa Heydarian	University of Toronto, Canada
Dr. Muhammad Afzal Khan	The Islamia University of Bahawalpur, Pakistan
Dr. Seigo Kinuya	Kanazawa University, Japan
Dr. Wolfram Laub	Oregon Health & Science University, USA
Dr. Percy Lee	University of California at Los Angeles, USA
Dr. Lanchun Lu	The Ohio State University, USA
Dr. Panayiotis Mavroidis	Karolinska Institutet and Stockholm University, Sweden
Dr. Kwan-Hoong Ng	University of Malaya, Malaysia
Dr. Laura Natal Rodrigues	Universidade de Sao Paulo, Brazil
Dr. W. Howell Round	University of Waikato, New Zealand
Dr. Baozhong Shen	Harbin Medical University, China
Dr. Yulin Song	Memorial Sloan-Kettering Cancer Center, USA
Dr. Kelin Wang	University of Miami, USA
Dr. James O. Wear	American College of Clinical Engineering, USA
Dr. Peter K. N. Yu	City University of Hong Kong, Hong Kong, China
Dr. Mutian Zhang	University of Nebraska Medical University, USA

## **TABLE OF CONTENTS**

## Volume 1 Number 2

## August 2012

Three Dimensional Expansion of Margins for Single-Fraction Treatments:
Stereotactic Radiosurgery Brain Cases
Q. H. Zhang, M. Chan, Y. L. Song, C. Burman 15
Planning Margins to CTV for Image-Guided Whole Pelvis Prostate Cancer
Intensity-Modulated Radiotherapy
Z. D. Wang, K. L. Wang, F. A. Lerma, B. Liu, P. Amin, B. Y. Yi, G. Hobeika, C. Yu
A Dual-Radiolabel Marker Quantifies Decrease in HT29 Xenograft Hypoxia Induced
by Mild Temperature Hyperthermia
M. T. Zhang, XF. Li, M. Suehiro, Z. H. Zhao, D. Gagne, J. Pizzonia, Z. G. Zhang, G. Li, C. C. Ling,
J. L. Humm
A Laplacian Surface Deformation and Optimization Based 3D Registration
Algorithm for Image Guided Prostate Radiotherapy
J. H. Zhou, S. T. Zhang, S. Kim, S. Jabbour, S. Goyal, B. Haffty, D. Metaxas, N. J. Yue
A Hybrid Algorithm to Address Ambiguities in Deformable Image Registration
for Radiation Therapy
S. Gao, Y. B. Zhang, J. Z. Yang, C. H. Wang, L. F. Zhang, L. E. Court, L. Dong
Energy Dependence of the New Gafchromic EBT3 Film: Dose Response Curves for 50 kV,
6 and 15 MV X-Ray Beams
G. Massillon-JL, ST. Chiu-Tsao, I. Domingo-Muñoz, M. F. Chan

# International Journal of Medical Physics, Clinical Engineering and Radiation Oncology (IJMPCERO)

#### **Journal Information**

#### SUBSCRIPTIONS

The International Journal of Medical Physics, Clinical Engineering and Radiation Oncology (Online at Scientific Research Publishing, www.SciRP.org) is published quarterly by Scientific Research Publishing, Inc., USA.

#### **Subscription rates:**

Print: \$39 per issue. To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

#### SERVICES

Advertisements Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies) Reprints Co-ordinator, Scientific Research Publishing, Inc., USA. E-mail: sub@scirp.org

#### COPYRIGHT

Copyright©2012 Scientific Research Publishing, Inc.

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assumes no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

#### **PRODUCTION INFORMATION**

For manuscripts that have been accepted for publication, please contact: E-mail: ijmpcero@scirp.org





## International Journal of Medical Physics, Clinical Engineering and Radiation Oncology

ISSN 2168-5436 (Print) ISSN 2168-5444 (Online) http://www.scirp.org/journal/ijmpcero

**International Journal of Medical Physics, Clinical Engineering and Radiation Oncology** publishes original research and clinical articles relevant to medical physics, clinical/biomedical engineering and radiation oncology. It provides an international forum for research, reviews, education and training on the following topics:

- Biomedical optics
- Clinical trials, outcomes research
- Diagnostic physics and its applications
- Education and training in medical physics, clinical/biomedical engineering, and radiation oncology genetics, and tissue engineering
- Hadron-therapy
- Measuring systems, digital signal processing, and medical instrumentation
- Medical imaging
- Molecular imaging
- New technologies development and applications
- Nuclear medicine
- Professional issues in medical physics, clinical//biomedical engineering, and radiation oncology
- Radiation detection, protection, shielding, and radiation response
- Radiation dosimetry and metrology
- Radiobiology
- Radiotherapy physics and its applications
- Therapies (non-ionising radiation)

Publications may be in the form of a (1) Review Article, (2) Research Article, (3) Short Report, (4) A Rapid Communication, (5) Technical Note, (6) Correspondence, (7) Editorial, (8) Special Report (9) Clinical Trials or (10) Advertisements.

### **Notes for Intending Authors**

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

### Website and E-Mail

http://www.scirp.org/journal/ijmpcero E-mail: ijmpcero@scirp.org