

SIDDHARTHA AJAYAKUMAR

Principal Clinical Scientist (Medical Physics)

CONTACT

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PROFILE

Dedicated Principal Clinical Scientist with extensive expertise in Radiotherapy Medical Physics, encompassing Acceptance Testing and Commissioning, Treatment Planning, Quality Assurance, Radiation Dosimetry, and Radiation Safety. Proven track record in setting up Radiation Oncology Departments, coupled with a passion for educating students and staff in Medical Physics and Radiation Safety.

KEY SKILLS

Establishment of Radiation Oncology Departments

Acceptance Testing and Commissioning of Linear Accelerators (Varian and Elekta), HDR Brachytherapy and CT simulators.

Proficient in Treatment Planning: 3D CRT, IMRT/IGRT, VMAT, SBRT, HDR Brachytherapy

Comprehensive Quality Assurance and Dosimetry of Radiotherapy Machines

Radiation Safety Officer approved by RP&AD, AERB, INDIA

Treatment Planning Software Proficiency: Eclipse, Ray Station, Pinnacle

PROFESSIONAL EXPERIENCE

Clinical Practice: Engaged in clinical practice within hospital or healthcare settings, collaborating with multidisciplinary teams to design and deliver personalized treatment plans for cancer patients.

Academic Involvement: Involved in academic institutions as educators, mentors, or researchers, contributing to the training of future medical physicists and the dissemination of knowledge through publications and presentations.

Regulatory Compliance: Responsible for ensuring compliance with national and international regulatory standards, conducting equipment calibrations, maintaining documentation, and participating in accreditation processes.

EXPERIENCE

Principal Clinical Scientist (Radiotherapy Physics)

Royal Cornwall Hospital NHS, Cornwall, United Kingdom | May 2022 – Present

Radiotherapy treatment planning and plan-checking

Treatment planning system upgradation and commissioning.

Conduct Linear Accelerator Quality Assurance and Dosimetry as per the protocol

Manage departmental facilities including Varian Linear Accelerators, Ortho-voltage unit

Ray-station, and Philips Pinnacle Treatment Planning Systems

Senior Clinical Scientist (Clinical Oncology/Radiotherapy Physics)

Maidstone and Tunbridge Wells NHS Trust, United Kingdom | May 2019 - Dec 2021

Radiotherapy treatment planning and plan-checking using Eclipse and Pinnacle software.

Executed Linear Accelerator Quality Assurance and Dosimetry

Chief Medical Physicist and RSO

MJKM Cancer Research Centre, Alappuzha, India | August 2015 – March 2019

Lead Procurement, installation, acceptance testing, and commissioning of Varian Vital Beam LINAC

Upgraded and tested existing Varian 2300C/D LINAC

Validated upgraded Eclipse Treatment Planning Software

Managed treatment planning for various radiotherapy treatments including 3D CRT, IMRT, Rapid Arc, and Electron therapy

Ensured compliance with regulatory bodies (AERB) and submitted Annual Safety Status Reports.

Senior Medical Physicist and RSO

A J Hospital and Research Centre, Mangalore, India | July 2012 – July 2015

In my role as Senior Medical Physicist at A J Hospital and Research Centre, I was tasked with establishing the radiation oncology department from its inception. The department was equipped with state-of-the-art facilities, including Elekta Synergy LINAC, Microselectron HDR, Oncentra Treatment Planning System, CT Simulator, 1.5T MRI, and PET CT. My responsibilities encompassed:

Collaborating with architects to ensure optimal design specifications for LINAC and HDR bunkers, including wall thickness, materials, and spacing, facilitating the seamless integration of radiotherapy infrastructure.

Generating comprehensive reports outlining the specifications required for the procurement of treatment machines, adhering to regulatory standards.

Managing all regulatory processes, including importation, installation, and commissioning of treatment machines, in compliance with AERB regulations.

Undertaking acceptance testing and commissioning of Elekta Synergy LINAC, HDR Brachytherapy, and Oncentra Treatment Planning System.

Performing treatment planning for external beam radiotherapy (including 3D CRT, IMRT, and electron therapy) and various forms of brachytherapy (intracavity, interstitial, and surface mould).

Conducting thorough quality assurance and dosimetry assessments of radiation delivery equipment and treatment planning systems.

Ensuring the calibration and maintenance of radiation measuring instruments such as ion chambers, well chambers, electrometers, and survey meters.

Serving as a part-time lecturer at A J Institute of Medical Science, delivering lectures to graduate and postgraduate students specializing in radiotherapy and medical imaging.

Acting as a consultant Radiation Safety Officer (RSO) at A J Institute of Dental Science, overseeing radiation safety practices and compliance within the dental institute.

Medical Physicist and RSO

Govt. General Hospital – Ernakulum, India | Sept 2009 – June 2012

At Govt. General Hospital, I commenced my professional journey in the field of medical physics. The department boasted a comprehensive setup including a Tele cobalt machine, Elekta Synergy, and HDR Brachytherapy equipment. My primary responsibilities included:

Conducting treatment planning for 3D conformal radiotherapy (3D CRT) and HDR Brachytherapy, particularly in intracavity applications.

Implementing rigorous quality assurance measures and dosimetry protocols to uphold the standards of radiotherapy.

Serving as the Radiation Safety Officer (RSO), ensuring the safety of both staff and the public.

Compiling and submitting annual safety status reports to the Atomic Energy Regulatory Board.

Providing training and mentorship to internship students pursuing a Bachelor of Science in Medical Radiological Technology (BSc MRT).

EDUCATION

Master of Science in Radiation Physics (MSc)

University of Calicut, 2006-2008 Passed with 76% (First Class with Distinction)

Bachelor of Science in Physics (BSc)

University of Calicut, 2003-2006 Passed with 91% (First Class with Distinction)

CERTIFICATIONS

Radiation Safety Officer (RSO) Certification, 2008, INDIA

MEMBERSHIPS

Health and Care Professions Council (HCPC UK) No: CS20622

Institute of Physics and Engineering in Medicine (IPEM), No: 232296, United Kingdom

Association of Medical Physicists of India (AMPI), No: LM 2114 – India

PUBLISHED PAPERS

1. Dosimetric studies of mixed energy intensity-modulated radiotherapy for prostate cancer treatment. Journal of Radiotherapy Volume 2014 (2014), Article ID 760206.
2. FLUKA Monte Carlo-based dosimetric studies of dual-energy medical linear accelerator. Journal of Radiotherapy Volume 2014, Article ID 343979.

REFEREES

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