Editorial

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Computed Tomography and Digital Radiography of X-rays.

Maria Pia Morigi [1,*] and Fauzia Albertin [2]

1. Department of Physics and Astronomy "Augusto Righi", University of Bologna, Viale Carlo Berti Pichat 6/2,40127 Bologna, Italy.

***Corresponding author**

Maria Pia Morigi,
Department of Physics and Astronomy "Augusto Righi", University of Bologna, Viale Carlo Berti Pichat 6/2,40127 Bologna, Italy.
Email : mariapia.morigi@unibo.it

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INTRODUCTION

X-ray imaging has expanded quickly recently, becoming more widely used outside of the medical industry. It is now essential to many different study fields. X-ray imaging has become more popular due to the potential and non-invasiveness of computed tomography and digital radiography.essential tool in many domains, including cultural heritage research, material and industrial component characterization, and medical diagnostics.

Together with greater processing power, the design and development of new detectors and X-ray sources have allowed for previously unimaginable levels of image clarity and spatial resolution, enabling the imaging of even submicron details with instruments in the lab.
The purpose of this Special Issue, "X-ray Digital Radiography and Computed Tomography," is to introduce and showcase new tools and state-of-the-art techniques for X-ray imaging, along with a variety of applications across several industries.

Submissions for this Special Issue came from a variety of nations, including the US, Australia, and Europe, and they were centered on the most diversified study topics. Twenty-three manuscripts were chosen following a thorough evaluation process: nineteen research articles and four review articles that demonstrate the use of computed tomography and X-ray digital radiography in a variety of fields, including medical imaging [1-3], the study of cultural heritage objects [4-6], and the fusion of X-ray and neutron imaging [7].

Additional subjects included in this Special Issue are analytical methods such microscopic synchrotron X-ray fluorescence [12] and the application of synchrotron light for phase-contrast and multi-contrast imaging [8–11]. New performance algorithms created for the reduction of cone-beam artifacts in CT images are the subject of several contributions [13]. additionally retrieving signals from non-sinusoidal intensity modulations in neutron and X-ray interferometry [14], or devoted to novel approaches like high-speed X-ray imaging [17], rotation-free dynamic multi-angle X-ray tomography [16], and multiscale holotomography [15]. In the previous two research papers, the design and building of a new furnace for in situ wettability experiments at high temperatures under X-ray microtomography [19] and the implementation concepts of a full CT reconstruction toolchain [18] are described.

Four review papers, which are interesting, present the principles and viewpoint of radiographic imaging with muons [20], a review of coherent X-rays from early synchrotron tests to the most recent brain studies [22], a comparison of imaging techniques for biological and biomedical studies [21], and an overview of photon-counting spectral imaging detectors [21].

As the Special Issue Editors, we hope that this book will help the scientific community and advance understanding of the many different uses of computed tomography and X-ray digital radiography.
We would want to use this chance to express our gratitude to each and every author for their work.
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