

Preface

Advances in digital technology allowed the development of digital X-ray detectors that are currently available for projection radiography. Computed Radiography (CR) and Digital Radiography (DR) are digital technologies widely spread in health care institutions nowadays. These technologies have been replacing traditional Screen–Film (SF) systems, and this constitutes a challenge for radiographers and other health care professionals. The replacement of conventional fluoroscopic and radiographic equipment with digital imaging systems has increased rapidly in developed countries. Digital radiography detectors—based on different technological solutions—have become available for clinical applications.

Digital detectors offer several advantages when compared to analogue detectors such as wide dynamic range, adjustable image processing, better image quality, rapid image acquisition, and image access at remote locations.

The management of diagnostic quality and patient dose is a very important issue to be considered by radiographers when working with digital systems. Exposure has a direct influence in image quality representation, and dose delivered to the patient could be inappropriate for diagnostic purpose. Diagnostic accuracy could be affected by inadequate exposure and thus an appropriate exposure level should be achieved.

This book would constitute a contribution to those who want to learn this subject as students and reflect their own practice as professionals while performing radiological examinations when using digital systems.

This book will focus on a broad range of topics that are relevant for a comprehensive knowledge about digital radiology systems. The book is intended to provide a practical approach resulting from the authors work in recent years. An integrated vision from radiography, engineering, and physics will be the output of this book.

We hope that this book constitutes a valid contribution for the improvement of knowledge of radiographers, radiography students, radiologists, radiology residents, medical students, and medical physicists, among other health care staff working in the radiology field.

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