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Stuart R. Stock

Bert Müller

Ge Wang

Editors

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Introduction

This volume is published in honor of the 90th birthday of Professor Ulrich Bonse who founded the conference, chaired the first five meetings and edited the first five proceedings. This volume is also dedicated to the memory of Professor Jim Elliott.

Professor Bonse pioneered a number of very important x-ray characterization methods. One was x-ray interferometry which is a direct precursor of one approach to x-ray phase contrast tomography. The second was the development of x-ray area detectors for volumetric tomography; this design coupled a single crystal scintillator to a CCD detector via an optical lens and is now ubiquitous. This work in the late 1980s and follow-on applications underlies much of the burgeoning field of non-clinical tomography.

Professor Elliott's 1982 paper reported the first microComputed Tomography (microCT or microtomography) results. This first generation instrument (pinhole beam, scan and translate methodology) was built in the face of considerable skepticism about the usefulness of x-ray microCT; thirty-four years later there are as many as 2,500 microCT systems scattered around the world. Another very important contribution was the systematic investigation of the precision and accuracy of linear attenuation coefficient values derived from tomographic data, i.e., the quantitative interpretation of contrast.

Program Committee member Erik L. Ritman will retire in the near future, and this is the last *Developments* conference in which he will serve in this capacity. He has been on the Program Committee since the beginning, and his discussions of papers will be greatly missed. Since the 1960s, he has developed advanced x-ray imaging techniques for physiological studies, innovating in areas as diverse as clinical CT and microCT and imaging with novel contrast mechanisms. His activities also extend to translation of x-ray approaches to neutron beam imaging. Professor Ritman is well known as a mentor and for enthusiastically sharing his ideas with the community.

We hope the present volume is as useful to others as the past volumes have been to us. It is difficult to keep up with all of the activity in x-ray tomographic imaging, scattered as it is across many disciplines, and having a cross-disciplinary collection of studies is something that helps one find individuals active in specific areas and through them track down what is the current state of the art.

The Program Committee is an important part of the conference, and a photograph of the members attending the 2016 planning meeting follows the Preface and the Chair's Postscript.

Stuart R. Stock, Chair
Ge Wang and Bert Müller, Co-chairs

Chair's Postscript

It has been my privilege to Chair the last five *Developments in X-ray Tomography* conferences, and bringing the conference to the start of its third decade has been rewarding in ways too numerous to mention. I have enjoyed following in Professor Bonse's footsteps as Chair. Chairing five *Developments* was enough for Prof. Bonse, and it is enough for me. I am confident the Co-Chairs of this conference and the Program Committee will lead the meeting forward in new and interesting directions.

I want to offer special thanks to the SPIE staff with whom I worked; their efforts made it quite a painless to assemble the program and publish the proceedings.

Program Committee at the 2016 planning meeting. Bottom row, from left to right: Felix Beckmann, Atsushi Momose, Graham Davis, Erik Ritman. Top row, from left to right: Stuart Stock, Mark Rivers, Bert Müller, Ge Wang.

Stuart R. Stock