Abstracts and ORCiDs

The following guidelines explain how to prepare chapter-level abstracts for your book. Incorporating the abstracts and including your unique researcher ORCiD enables us to host the book in digital collections and on online platforms. Most importantly, chapter abstracts and author ORCiDs will enhance discoverability thereby increasing the overall readership of the work and citations. Although abstracts are visible online, they aren't included in either the hard copy of the book or in the ebook.

Chapter Abstracts

Please supply an abstract for each chapter of your book, including the introduction and conclusion. These abstracts become part of the book's metadata and facilitate hits through online searches, thereby improving discoverability in electronic databases. It isn't necessary to provide abstracts for the preface, foreword, and other front matter materials.

Each chapter abstract should be accompanied by the chapter name and number, and author name. It should be **100-200 words** in length, providing a clear and concise overview of the content of the chapter. Ensure that the abstract is self-contained, without abbreviations, footnotes, or incomplete references – it needs to make sense on its own. The third person voice rather than first person should be used (e.g., "this chapter discusses" rather than "I discuss"). Finally, the abstract should not contain abbreviations, footnotes, or incomplete references.

Deliver the chapter abstracts to the Publisher at the same time as you submit your final manuscript.

Note about keywords

Keywords are not needed as a separate list; rather, they should be included in the text of abstracts. It's a good idea to make sure any important keywords are used in the abstract, since they will help others find your work and improve citations of the chapter. Think of them as the labels for your chapter, make a list, then incorporate them into your title and abstract. Again, since many search engines only index titles and abstracts, keywords should be embedded into the title and abstract rather than provided separately.

Example

Book Title	*Big Data in Omics and Imaging: Association Analysis*
Chapter Author(s)	Momiao Xiong (http://orcid.org/0000-0003-0635-5796) Joshua Akey (http://orcid.org/0000-0002-4411-1330)
Chapter #. Title	Chapter 3. Association Studies for Qualitative Traits
Abstract	Clinical manifestations of complex diseases including obesity, diabetes, cardiovascular disease, hypertension, schizophrenia, Alzheimer's disease, and cancer, arise from integrated actions of multiple genetic and environmental factors. In the past decades, linkage analyses have been the primary method for genetic studies of diseases. However, the fact that many diseases are caused by multiple mutations and genes that individually contribute only modestly to disease risk limits the power of linkage studies. The rapid development in next generation sequencing technologies that generate high-dimensional genetic variation data is changing the paradigm from linkage analysis to association analysis, and from single marker analysis to the joint analysis of multiple variants in a genomic region. This chapter begins with an introduction to the Hardy-Weinberg equilibrium and genetic models that are the basis of underlying test statistics and then covers multivariate group tests: collapsing method, combined multivariate and collapsing (CMC) method, weighted sum method, score test and logistic regression, and sequencing kernel association test (SKAT). Finally, functional association analysis: function principal component analysis for association tests and smoothed functional principal component analysis for association tests are presented. **[180 words]**

ORCiD

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Including ORCiD in your submission

Simply copy and paste your ORCiD into the Word document of your chapter, after the chapter title and abstract, and next to your name. If you've used LaTEX for your submission, then provide the abstract in a separate Word document and insert the ORCiD with your name as indicated above.

ORCiDs should be added to book title pages as well as chapter title pages. For authored books, the author name(s) and ORCiD(s) should be included on all chapter title pages as well as the book title page. If you're the editor of a book, include your ORCiD on the book title page (and also on any chapter in which you're a named contributing author).

Neither abstracts nor ORCiDs will be visible in the print book.

Chapter Title

1st Author Name

Orcid.org/0000-0123-4567-8910

2nd Author name

Orcid.org/0198-7654-3210-0000

Abstract

100-200 words

Introduction

Following the Abstract, the chapter begins in earnest. This is where the chapter would visibly begin in the printed work. It should include an element of introduction to the chapter, as though the abstract above was not present. It may even repeat elements of the abstract.

Example

Book Title *Friction Stir Welding: Dissimilar Aluminum Alloys*

Chapter Author(s) Noor Zaman Khan (http://orcid.org/0000-0002-4747-9114)
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Chapter #. Title Chapter 3. Friction Stir Welding of Aluminum Alloys

Abstract This chapter covers friction stir welding (FSW) for all categories of aluminum alloys. It discusses relevant effects of FSW process parameters which manifest in the material in terms of heat input, material flow, and microstructure evolution. The chapter is organized according to each Al-alloy category with the prevailing temper condition and weld consolidation discussed, and also gives details of how various favorable and deleterious phases evolve. Explanations are accompanied by relevant micrographs and transmission electron microscopy (TEM) outputs. The chapter should enable the reader to identify and relate evolving microstructure as a consequence of combined process parameters, and ultimately predict mechanical properties. **[102 words]**

Introduction

Friction Stir Welding (FSW) is a solid-state welding process which was developed initially to weld aluminum alloys. However, over the years it has evolved as an excellent fabrication process for other materials such as magnesium, copper, titanium, steel, etc. Consumables such as filler materials and shielding environment are not used in this process. The unique feature of this process is that it produces joints without internal imperfections such as porosity. Sound aluminum joints in thickness ranging from less than 1 mm to over 60 mm can be made in single pass. Several properties of joints fabricated using FSW are better than the joints made by fusion welding. The potential of FSW was tapped by industries which have large intrinsic use of aluminum alloys such as aerospace, shipbuilding, and automotive industries. Although it was invented in 1991, its large scale commercialization commenced beyond 1997 when the aircraft and aerospace major Boeing exploited potential of this process and adopted it to fabricate rocket fuel tanks. Significant gains in terms of both productivity and cost (cost with FSW was mere 20% as compared to cost with riveting) were achieved which led to the application of FSW for fabrication of other components such as carrier beams, fuselages and wings.

The enormous potential of FSW attracted other industrial sectors, and shipbuilding became a major sector where the weight of aluminum being FSWed is one of the largest. Apart from joint properties, the other big advantage of FSW is its high productivity, with virtually no post-weld finishing and distortion correction. Development of high-strength aluminum alloys has eliminated the notion of aluminum not being as strong as steel. Now aluminum alloys are available that are stronger than steels (e.g. AA2214). Several high-strength aluminum alloys have never been used in shipbuilding because of their poor weldability, but this barrier was successfully overcome by FSW. Another sector for high- volume welding is the automotive sector, which has also employed FSW. Several heat treatable and non-heat treatable alloys and their combinations can be joined by FSW with ease and at a speed of several meters per minute. Typically, AA 6082 is difficult to weld alloy by fusion processes, but its similar and dissimilar joining with several other alloys (e.g., with 2xxx, 5xxx and 7xxx series) can easily be performed by FSW. All these characteristics have made FSW an attractive choice for the automotive sector and it finds use in fabricating more than fifteen critical components including cylinder heads, axles, and intake manifolds, and their use continues to increase.