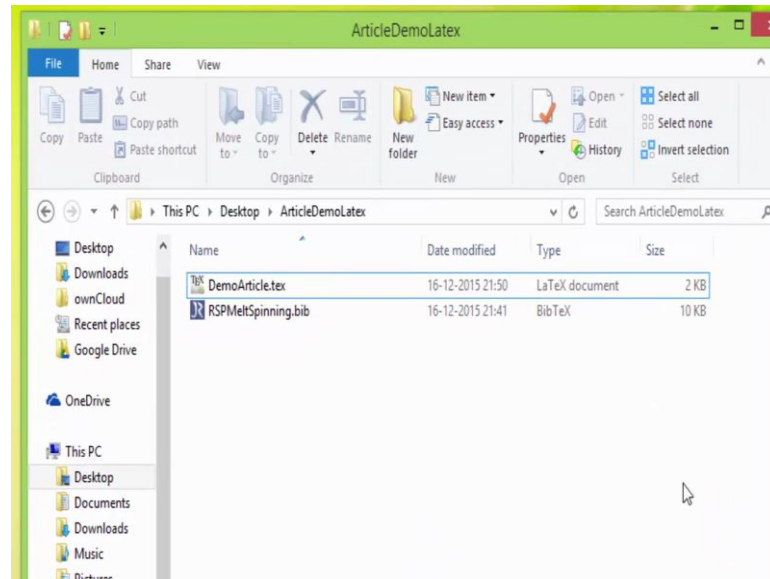


Introduction to Research
Department of Metallurgical and Materials Engineering
Indian Institute of Technology, Madras

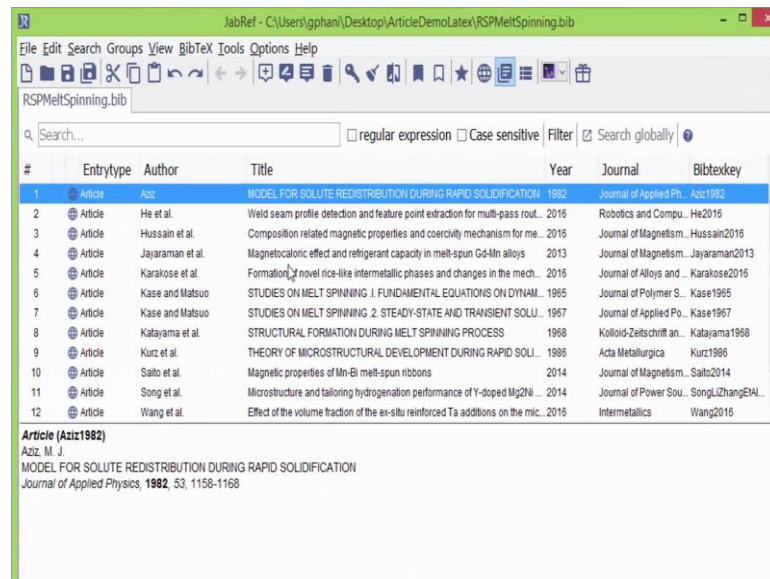
Lecture – 10
Tutorial on using BibTeX with LaTeX
to add Reference to a Document

(Refer Slide Time: 00:01)



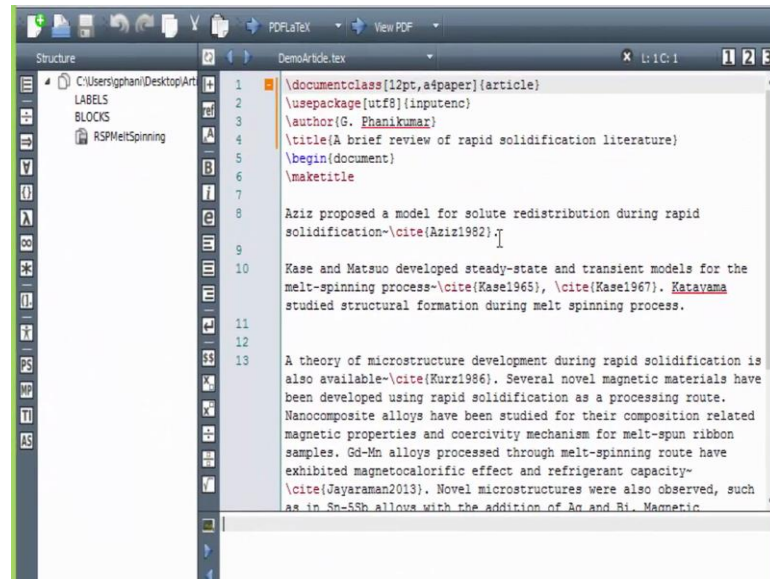
Here is a brief demo on how to use referencing in LaTeX. I have now in my folder, ArticleDemoLaTeX, two documents - DemoArticle.tex which contains the article and then RSPMeltSpinning.bib which contains the reference data we have picked up from the literature survey.

(Refer Slide Time: 00:20)



Let me open jabRef and show you how this bib file would look like. It looks like a spread sheet with the Article Type, Author, Title, Year, Journal and a unique BibTex key that is made available here. In case if BibTex key field is empty, you can use the Generate BibTex Keys button that is here to generate them automatically. You can also edit those keys later on if you want to make them brief for the use. Let us see how the tex file would look like.

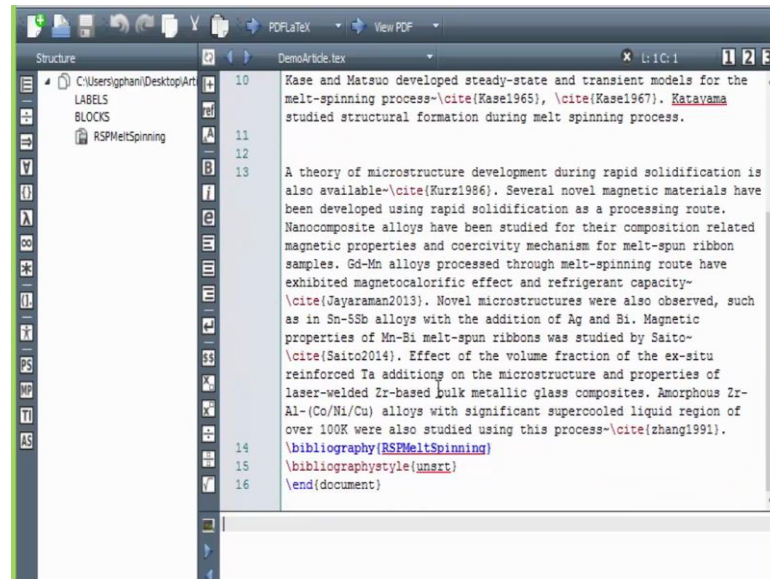
(Refer Slide Time: 00:51)

A screenshot of a LaTeX editor window titled 'DemoArticle.tex'. The window shows a file explorer on the left with a tree view containing 'LABELS', 'BLOCKS', and 'ASPMeltSpinning'. The main editor area displays the following LaTeX code:

```
1 \documentclass[12pt,a4paper]{article}
2 \usepackage[utf8]{inputenc}
3 \author{G. Rhanikumar}
4 \title{A brief review of rapid solidification literature}
5 \begin{document}
6 \maketitle
7
8 Aziz proposed a model for solute redistribution during rapid
9 solidification-\cite{Aziz1982}.
10
11 Kase and Matsuo developed steady-state and transient models for the
12 melt-spinning process-\cite{Kase1965}, \cite{Kase1967}. Katayama
13 studied structural formation during melt spinning process.
14
15 A theory of microstructure development during rapid solidification is
16 also available-\cite{Kurzi1986}. Several novel magnetic materials have
17 been developed using rapid solidification as a processing route.
18 Nanocomposite alloys have been studied for their composition related
19 magnetic properties and coercivity mechanism for melt-spun ribbon
20 samples. Gd-Mn alloys processed through melt-spinning route have
21 exhibited magnetocaloric effect and refrigerant capacity-
22 \cite{Jayaraman2013}. Novel microstructures were also observed, such
23 as in Sn-55pb alloys with the addition of Ag and Bi. Magnetic
```

Here is a sample LaTeX file that I have generated to make a small article based upon this literature that we have picked up from the Internet. It's a very small article; only for demonstration purpose. You can see that the article will have at the top document class, 12 point, A4 paper, Article. Then, we are using a package that would allow a utf8 type of an input, author name is given, title is given, and then, we start the document. Command `\make title` will make the top header of the article.

(Refer Slide Time: 01:25)



And then we have the write up here; and at the bottom, we close the document with `\end document`. Here are the two commands that are most important: `\bibliography` and then the name of the bib file without the extension, and then, the `\bibliography style`, and then, a keyword that tells you in which way you want to cite the references. `u n s r t` is a keyword which will tell you that you can sort these by numbers. The way you refer to the article is by inserting `\cite` and then the BibTeX key that is highlighted here, which is then going to be used for referencing.

(Refer Slide Time: 01:57)

```
\title{A brief review of rapid solidification literature}
\begin{document}
\maketitle

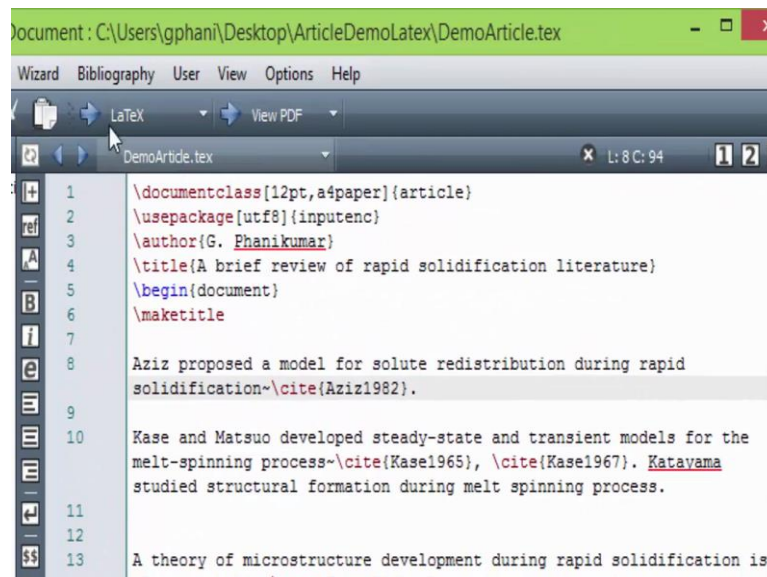
Aziz proposed a model for solute redistribution during rapid
solidification~\cite{Aziz1982}.

Kase and Matsuo developed steady-state and transient models for the
melt-spinning process~\cite{Kase1965}, \cite{Kase1967}. Katavama
studied structural formation during melt spinning process.

A theory of microstructure development during rapid solidification is
also available~\cite{Kurz1986}. Several novel magnetic materials have
been developed using rapid solidification as a processing route.
Nanocomposite alloys have been studied for their composition related
magnetic properties and coercivity mechanism for melt-spun ribbon
samples. Gd-Mn alloys processed through melt-spinning route have
exhibited magnetocaloric effect and refrigerant capacity~
\cite{Jayaraman2013}. Novel microstructures were also observed, such
as in Sn-5Sb alloys with the addition of Ag and Bi. Magnetic
```

You can insert these at any location that you like; only make sure that this key is available in the bib file.

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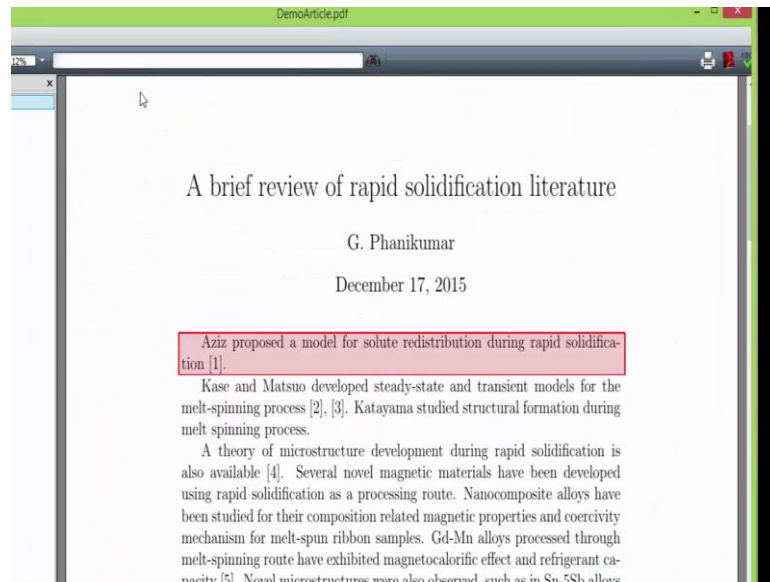


```
1 \documentclass[12pt,a4paper]{article}
2 \usepackage[utf8]{inputenc}
3 \author{G. Phanikumar}
4 \title{A brief review of rapid solidification literature}
5 \begin{document}
6 \maketitle
7
8 Aziz proposed a model for solute redistribution during rapid
9 solidification~\cite{Aziz1982}.
10
11 Kase and Matsuo developed steady-state and transient models for the
12 melt-spinning process~\cite{Kase1965}, \cite{Kase1967}. Katavama
13 studied structural formation during melt spinning process.
14
15 A theory of microstructure development during rapid solidification is
16 also available~\cite{Kurz1986}. Several novel magnetic materials have
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19 magnetic properties and coercivity mechanism for melt-spun ribbon
20 samples. Gd-Mn alloys processed through melt-spinning route have
21 exhibited magnetocaloric effect and refrigerant capacity~
22 \cite{Jayaraman2013}. Novel microstructures were also observed, such
23 as in Sn-5Sb alloys with the addition of Ag and Bi. Magnetic
```

And then the way we compile is, first we should do one round of LaTeX, and then, it will complain perhaps that the citations are not available; and then, we can run BibTeX, so

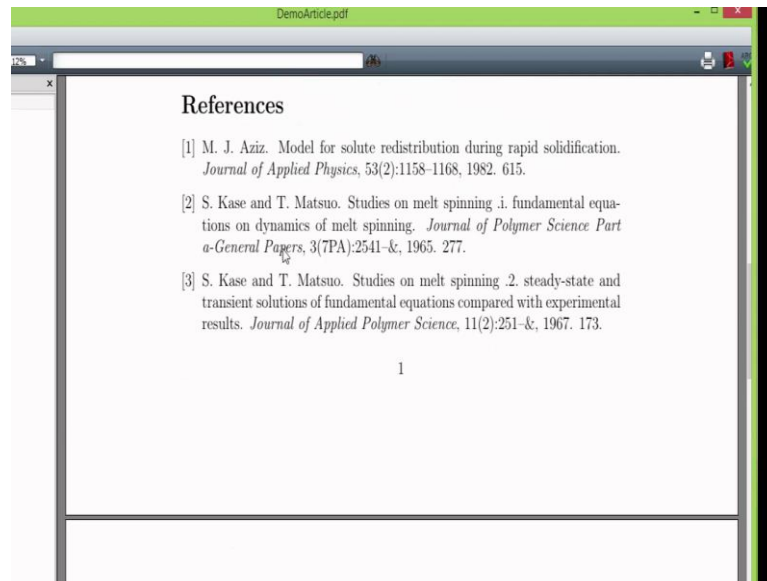
that those citations are available. Then we will run LaTeX couple of times, and then, you can now see that there is no more complaint. And then, we will run PDF LaTeX to generate a PDF directly.

(Refer Slide Time: 02:34)



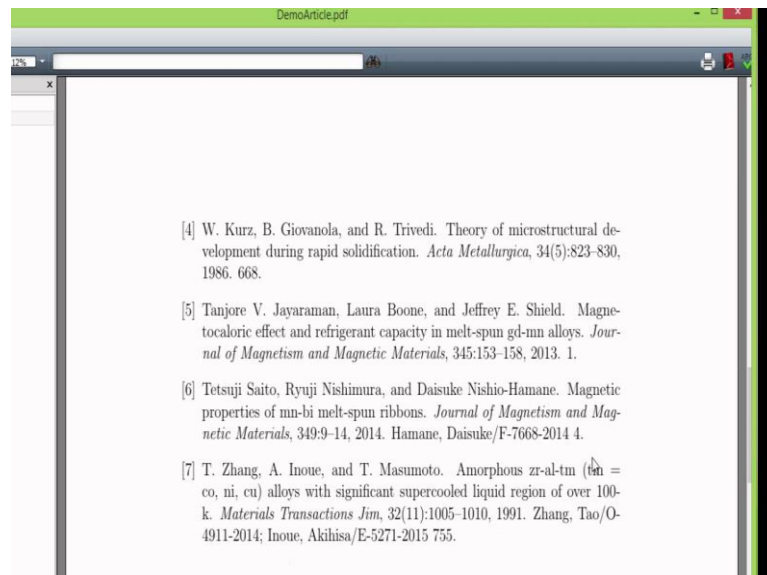
Then we can click on View PDF. Now we have this article here. You can see that the references are here 1, 2, 3, 4 etcetera.

(Refer Slide Time: 02:42)



In that, in the bottom automatically the references are listed with complete details in the same sequence as they have appeared in the way we have written.

(Refer Slide Time: 02:46)



Let me just modify this slightly to see how it will affect the sequencing.

(Refer Slide Time: 02:55)

```
5 \begin{document},
6 \maketitle
7
8 Aziz proposed a model for solute redistribution during rapid
solidification~\cite{Aziz1982}.
9
10 Kase and Matsuo developed steady-state and transient models for the
melt-spinning process~\cite{Kase1965}, \cite{Kase1967}. Katayama
studied structural formation during melt spinning process.
11
12
13 A theory of microstructure development during rapid solidification is
also available~\cite{Kurz1986}. Several novel magnetic materials have
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samples. Gd-Mn alloys processed through melt-spinning route have
exhibited magnetocaloric effect and refrigerant capacity~
\cite{Jayaraman2013}. Novel microstructures were also observed, such
as in Sn-5Sb alloys with the addition of Ag and Bi. Magnetic
```

I am just removing one line here and locating it somewhere else; then I am going to compile that again. Once through LaTeX, and then BibTeX, and then LaTeX - couple of times, and then PDF LaTeX. Now, if I view, you can see that the reference for Aziz paper has now renamed as 3 as per the sequence that we have referred and the same will be reflected also at the bottom of the text.

So referencing this way using bib file in LaTeX is quite straight forward. At any point if you want add more references, you could add them a manually here in JabRef or you can do a literature survey, and then, merge those items into the bib file. You can use a software like MiKTeX, that is freely available in the Internet to compile LaTeX files on your desktop, and you can install TexMaker which is a very good editor that will let you write these documents, and compile on the fly, and then show you how the document would look like. It is as simple as that.