



Network for Computational Nanotechnology (NCN)

Purdue, Norfolk State, Northwestern, MIT, Molecular Foundry, UC Berkeley, Univ. of Illinois, UTEP

WIND: A HTML5 Presentation Production Tool

Joseph M. Cychosz

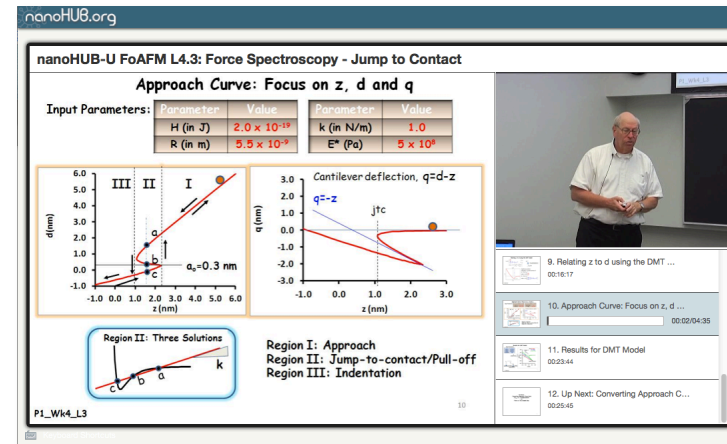
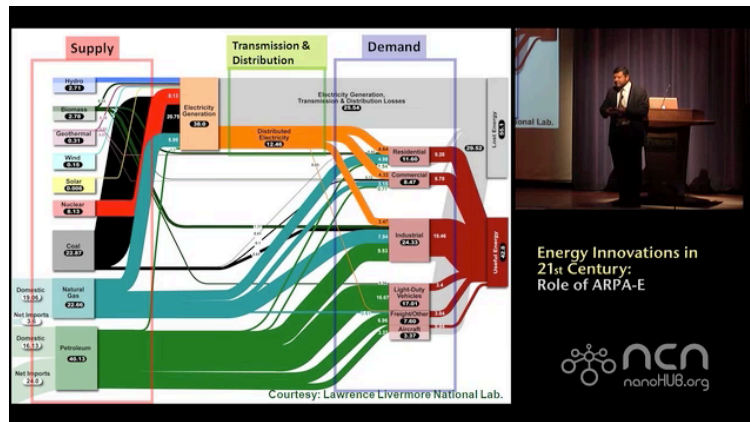
Tianwei “David” Liu

Network for Computational Nanotechnology (NCN)



Monday, September 24, 2012





Video

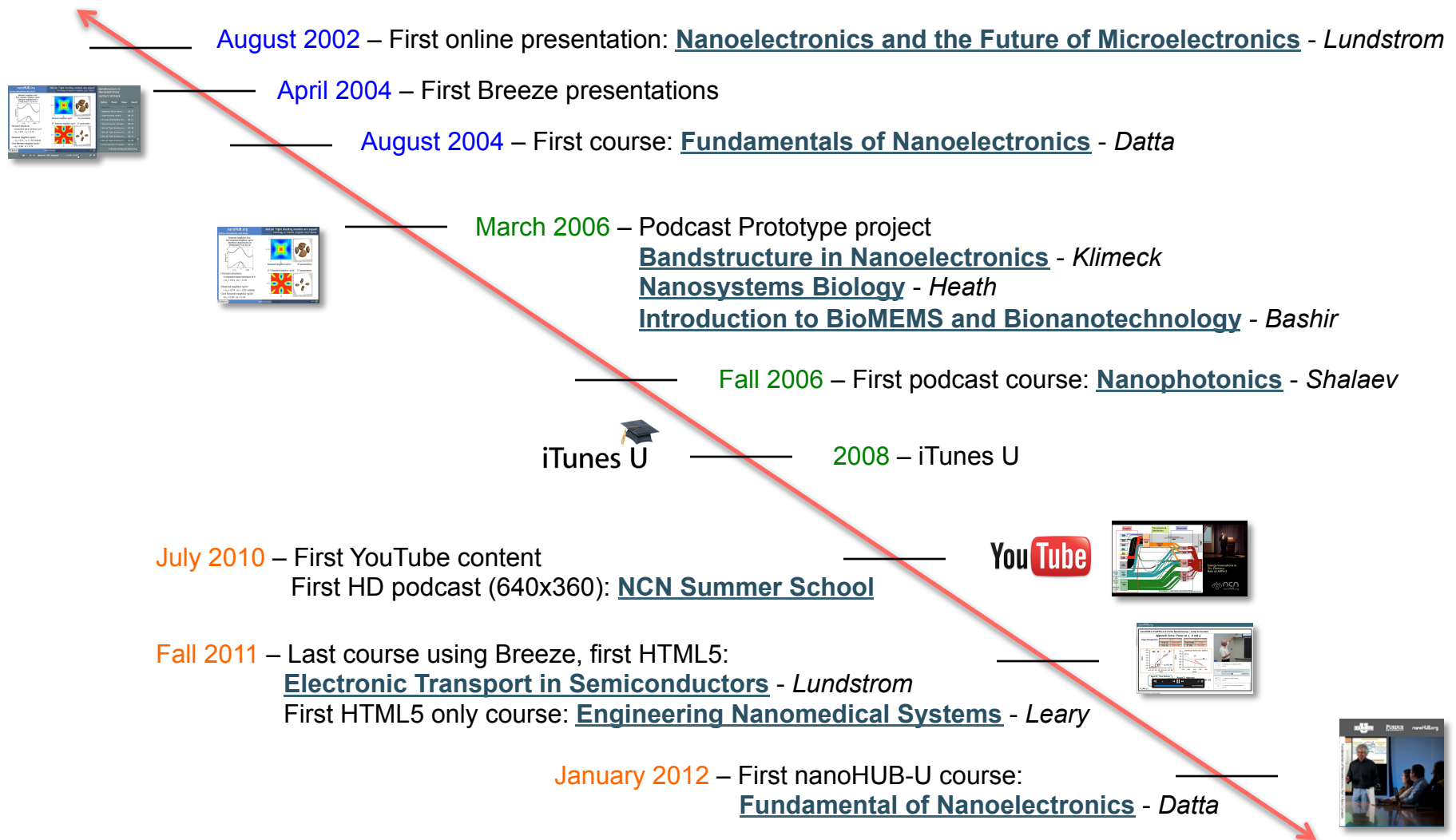
MP4 640x360

MP4 854x480



HTML5

Player built in to hubZERO



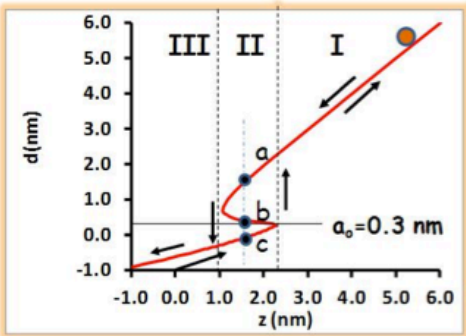
nanoHUB.org

nanoHUB-U FoAFM L4.3: Force Spectroscopy - Jump to Contact

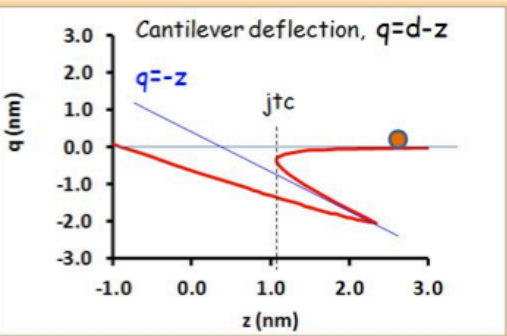
Approach Curve: Focus on z , d and q

Input Parameters:

Parameter	Value	Parameter	Value
H (in J)	2.0×10^{-19}	k (in N/m)	1.0
R (in m)	5.5×10^{-9}	E^* (Pa)	5×10^8

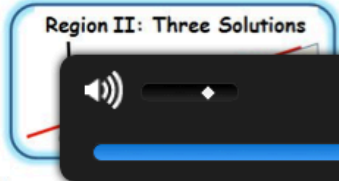


Graph showing distance d (nm) vs z (nm). The curve is divided into three regions: III, II, and I. A jump to contact (jtc) is indicated at $z = 0.3$ nm. Points a, b, and c are marked on the curve.

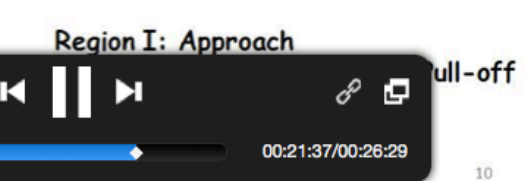


Graph showing cantilever deflection q (nm) vs z (nm). The curve shows a jump to contact (jtc) at $z = 1.0$ nm. The relationship $q = -z$ is indicated.

Region II: Three Solutions



Region I: Approach



P1_Wk4_L3

00:21:37/00:28:29

9. Relating z to d using the DMT ... 00:16:17

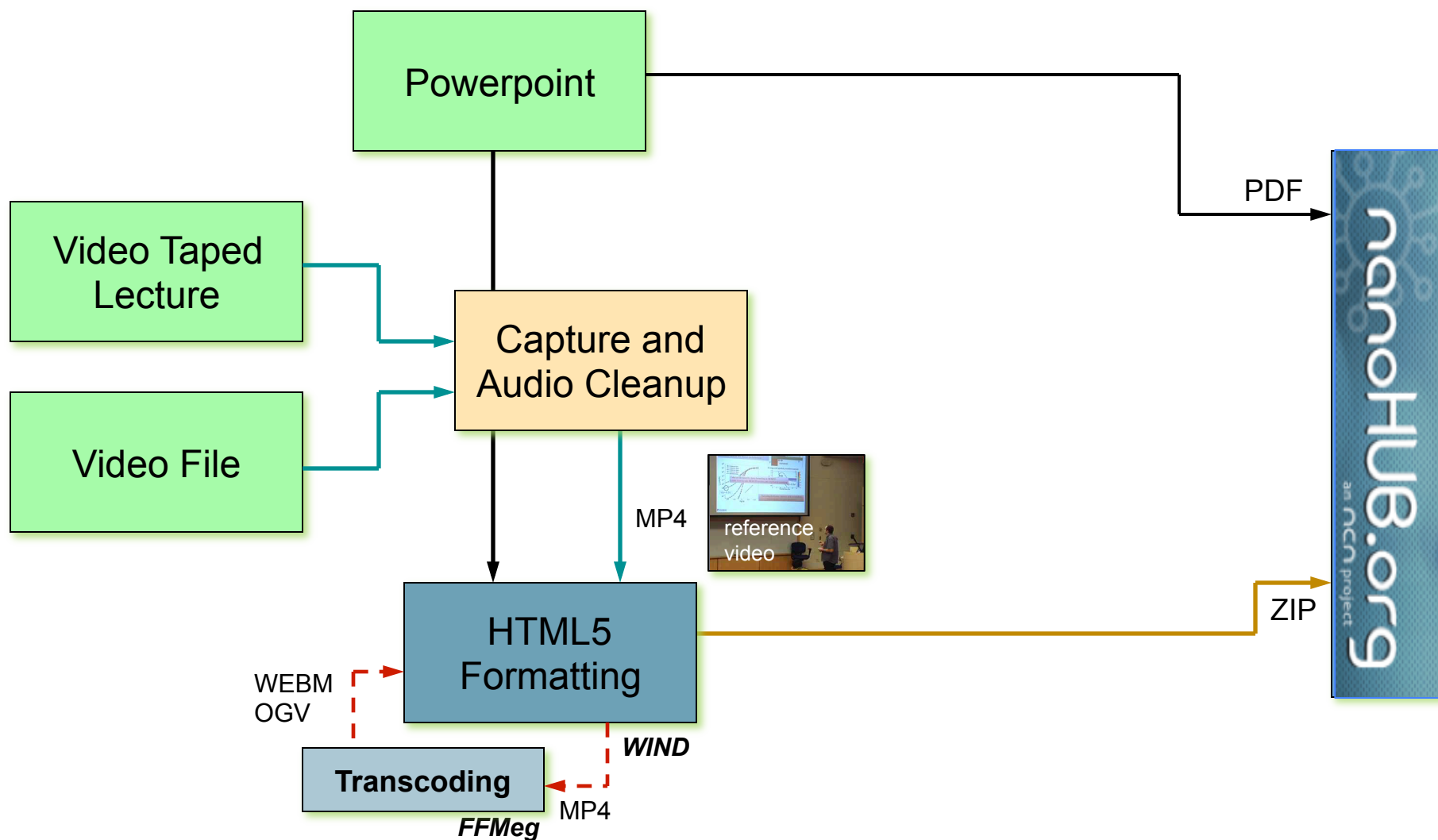
10. Approach Curve: Focus on z , d ... 02:28/04:35

11. Results for DMT Model 00:23:44

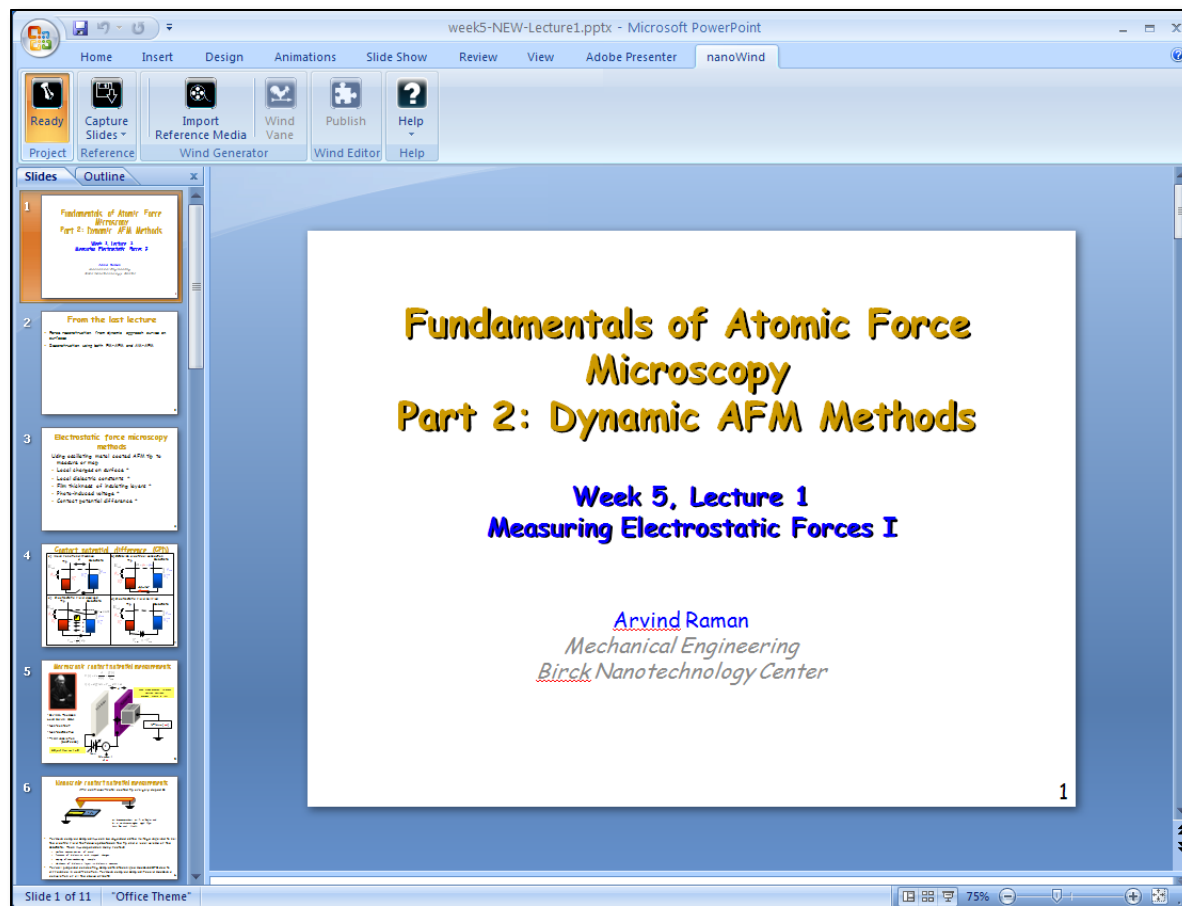
12. Up Next: Converting Approach C... 00:25:45

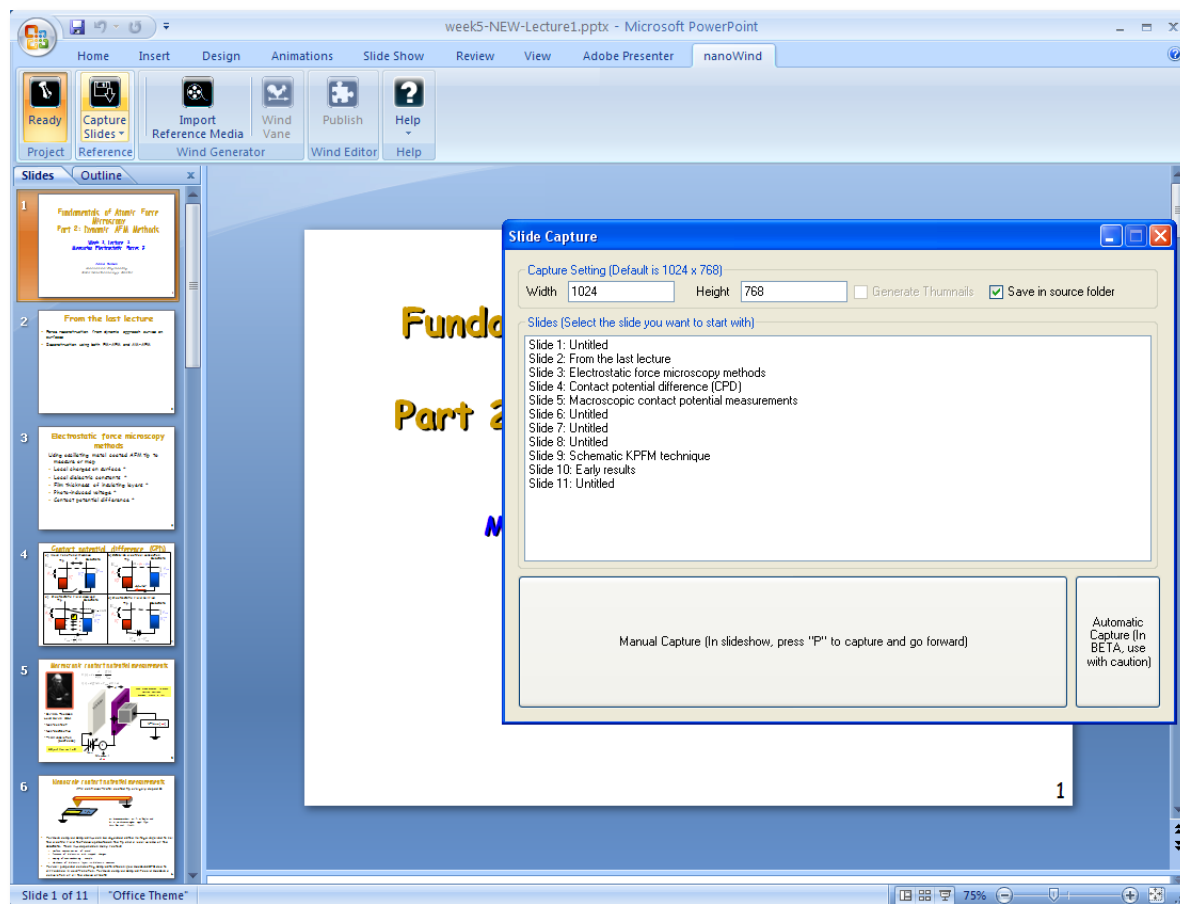
nanohub.org/resources/14350/watch#

HUBpresenter implemented for HUBzero by Chris Smoak



- ✓ Create Project
- ✓ Capture Slides
- ✓ Reference Video
- ✓ Slide Transitions
- ✓ Table of Contents
- ✓ Publish



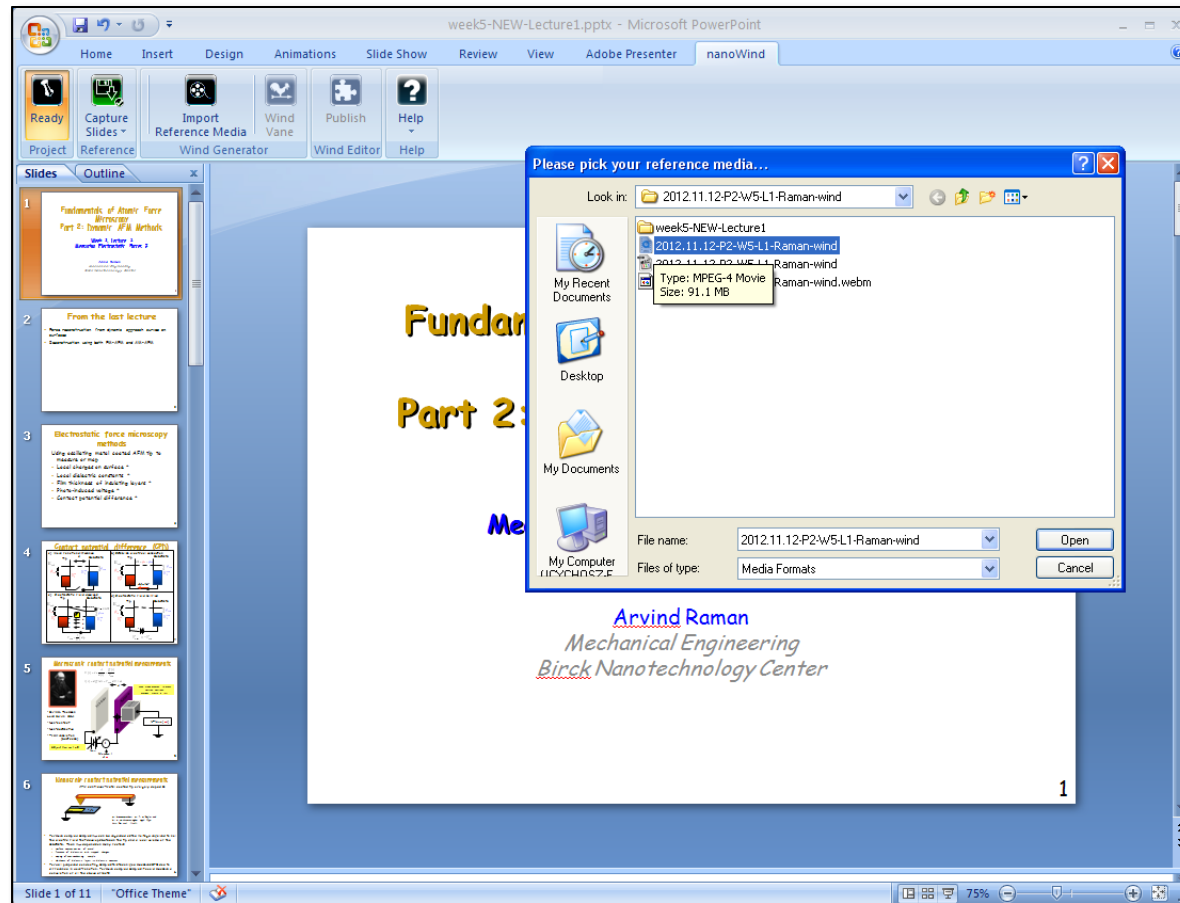


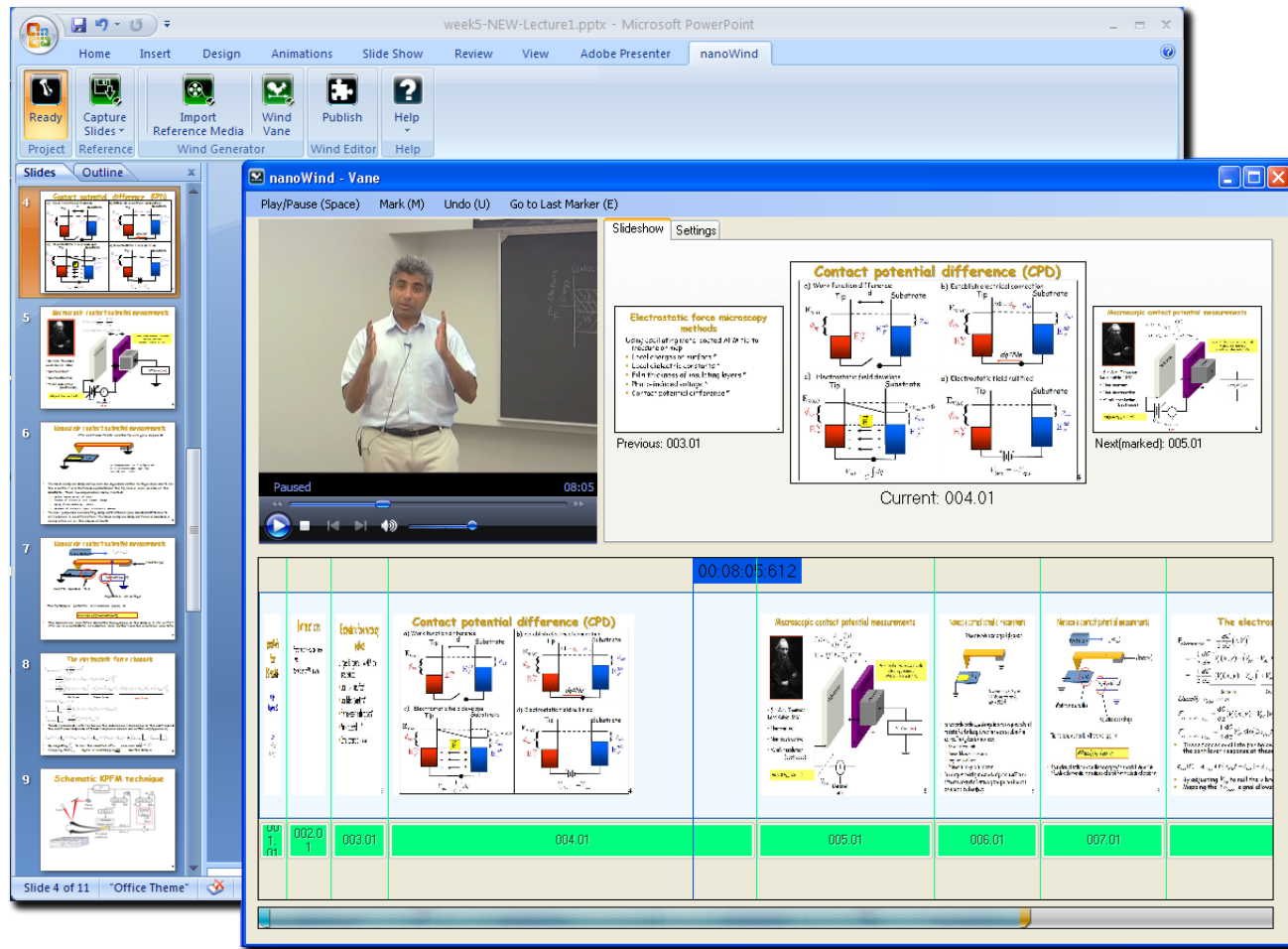
The screenshot shows a Microsoft PowerPoint window titled "week5-NEW-Lecture1.pptx - Microsoft PowerPoint". The ribbon includes "Home", "Insert", "Design", "Animations", "Slide Show", "Review", "View", "Adobe Presenter", and "nanoWind". The "nanoWind" tab is active, showing buttons for "Ready", "Capture Slides", "Import Reference Media", "Wind Vane", "Publish", and "Help".

The main slide area displays a slide with the text "Fundamentals of Atomic Force Microscopy Part 2: Imaging of AFM Methods". A "Slide Capture" dialog box is open, showing the following settings:

- Capture Setting (Default is 1024 x 768): Width 1024, Height 768, Generate Thumbnails, Save in source folder
- Slides (Select the slide you want to start with):
 - Slide 1: Untitled
 - Slide 2: From the last lecture
 - Slide 3: Electrostatic force microscopy methods
 - Slide 4: Contact potential difference (CPD)
 - Slide 5: Macroscopic contact potential measurements
 - Slide 6: Untitled
 - Slide 7: Untitled
 - Slide 8: Untitled
 - Slide 9: Schematic KPFM technique
 - Slide 10: Early results
 - Slide 11: Untitled
- Manual Capture (In slideshow, press "P" to capture and go forward)
- Automatic Capture (In BETA, use with caution)

The status bar at the bottom indicates "Slide 1 of 11" and "Office Theme".





The screenshot shows a PowerPoint presentation in 'nanoWind - Vane' mode. The main window displays a video of a presenter and a slide titled 'Contact potential difference (CPD)'. The slide content includes:

Contact potential difference (CPD)

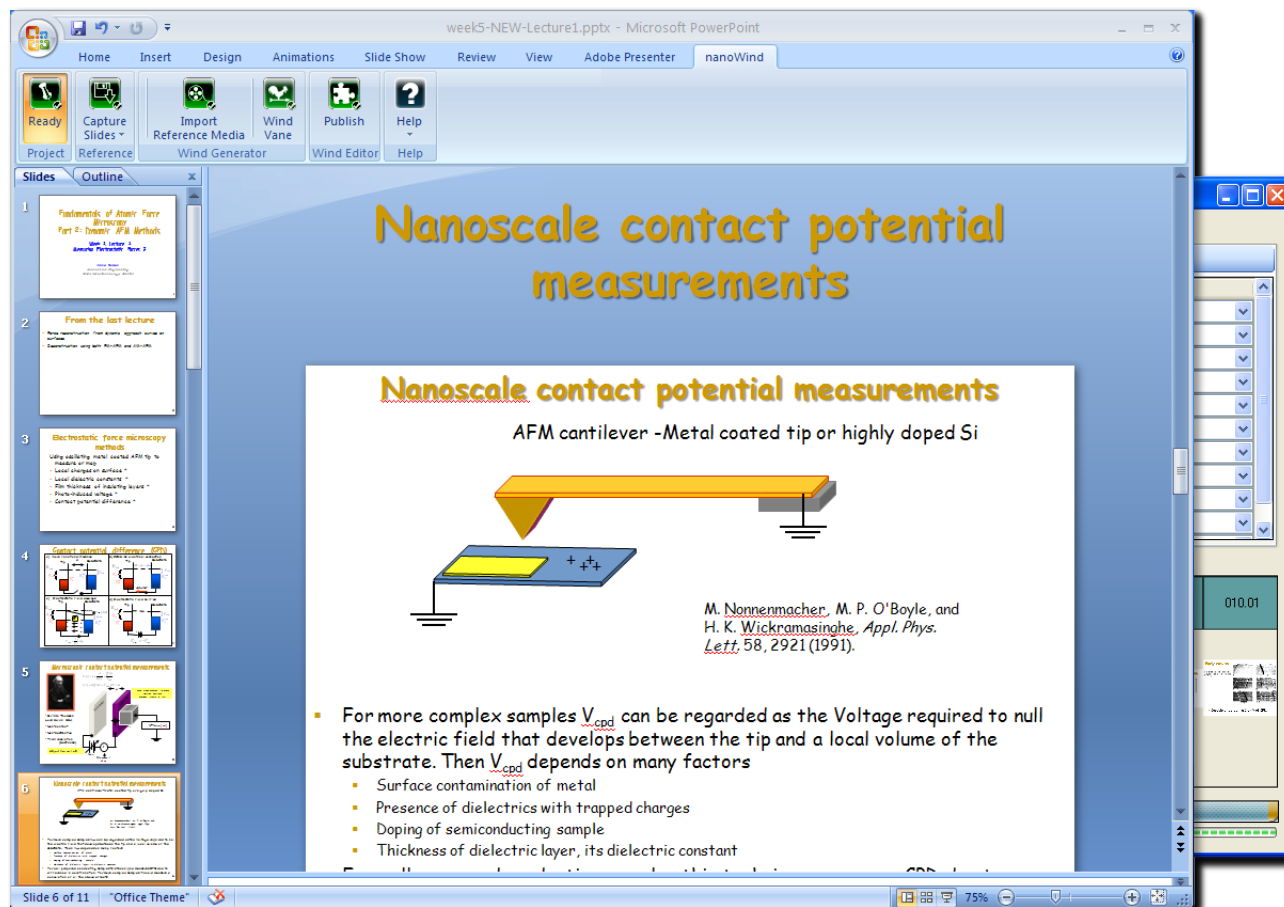
Electrostatic force microscopy methods:

- Using capacitance's sensed AFM tip to measure map
- Induced surface charges
- Local electrical capacitor
- Field through all insulating layers
- Pre-biased voltage
- Contact potential of ferrous

Navigation controls include 'Play/Pause (Space)', 'Mark (M)', 'Undo (U)', and 'Go to Last Marker (E)'. A 'Previous: 003.01' and 'Next(marked): 005.01' indicator is visible. Below the video is a slide navigation table:

			00:08:05:612				
	Intro	CPD	Contact potential difference (CPD)	Macroscopic contact potential measurements	Microscopic contact potential measurements	Macroscopic contact potential measurements	The electro...
	002.01	003.01	004.01	005.01	006.01	007.01	

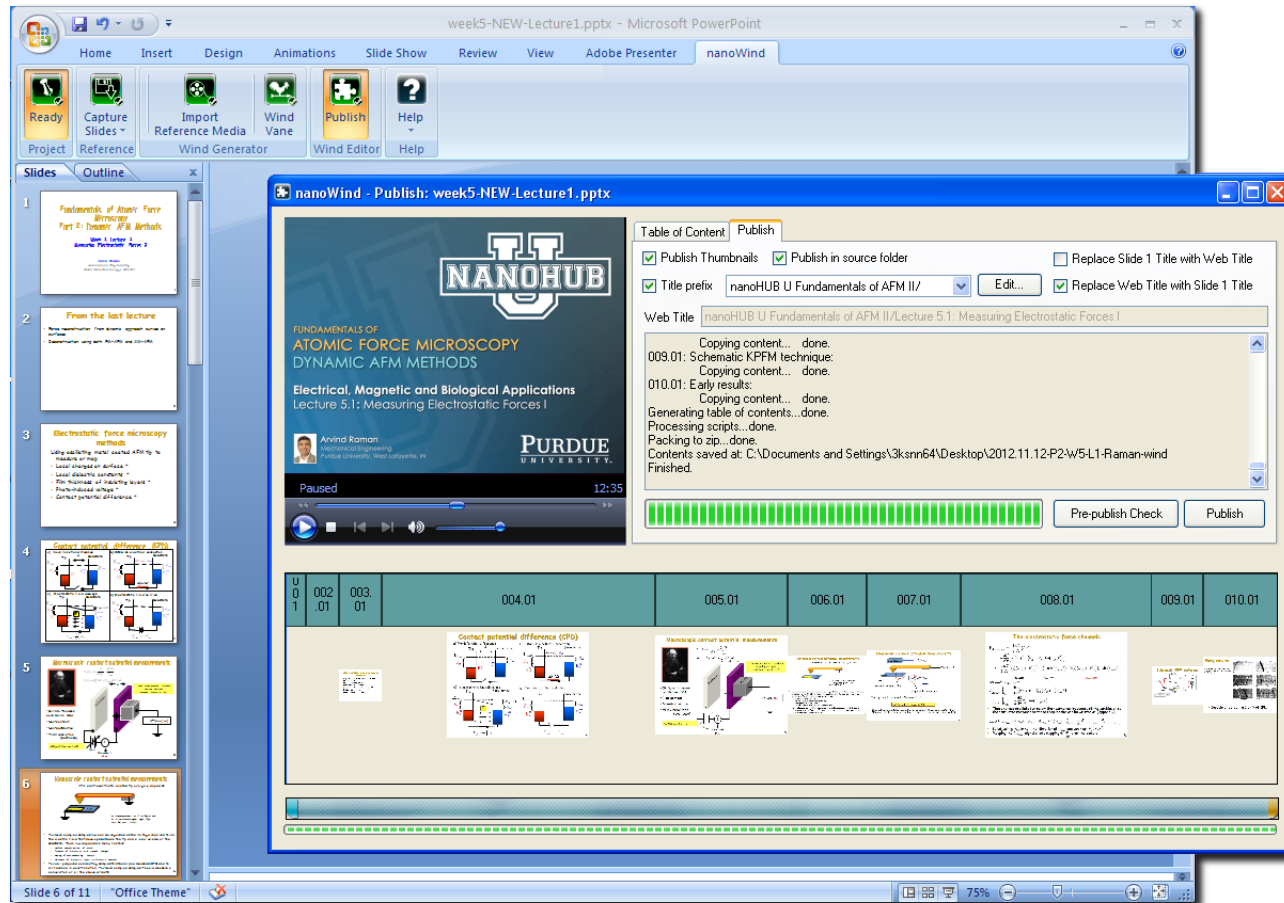
- Play/Pause (space)
- Set Mark (M)
- Undo Last Mark (U)
- Position to Last Mark (E)



The screenshot shows a Microsoft PowerPoint window titled 'week5-NEW-Lecture1.pptx - Microsoft PowerPoint'. The slide is titled 'Nanoscale contact potential measurements' in large yellow text. Below the title, it says 'Nanoscale contact potential measurements' in smaller yellow text, followed by 'AFM cantilever -Metal coated tip or highly doped Si'. A diagram shows a yellow AFM cantilever with a metal-coated tip (a grey rectangle) positioned above a blue substrate with a yellow surface. The substrate is connected to ground. Below the diagram, a citation reads: 'M. Nonnenmacher, M. P. O'Boyle, and H. K. Wickramasinghe, *Appl. Phys. Lett.* 58, 2921 (1991)'. A bulleted list follows:

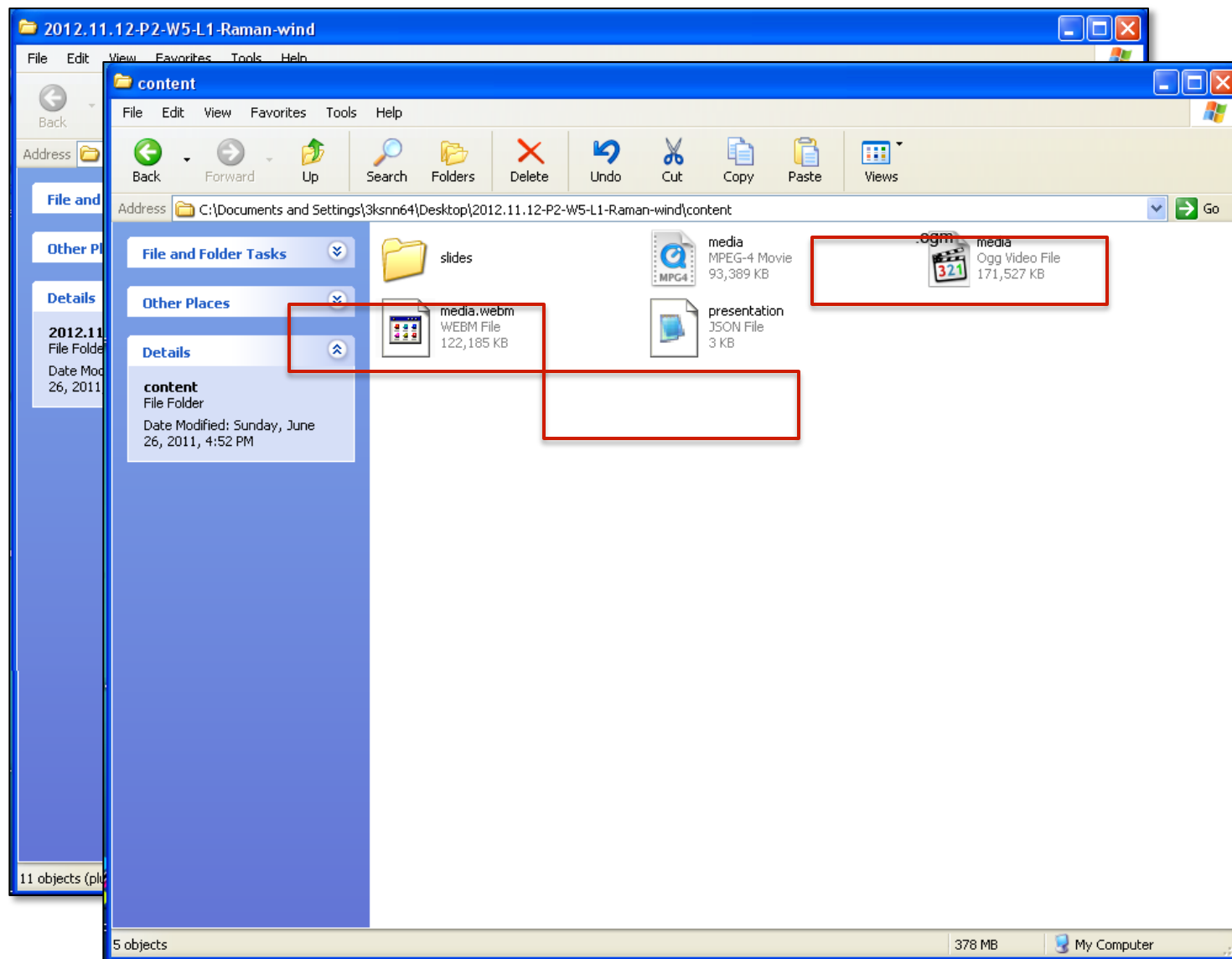
- For more complex samples V_{cpd} can be regarded as the Voltage required to null the electric field that develops between the tip and a local volume of the substrate. Then V_{cpd} depends on many factors
 - Surface contamination of metal
 - Presence of dielectrics with trapped charges
 - Doping of semiconducting sample
 - Thickness of dielectric layer, its dielectric constant

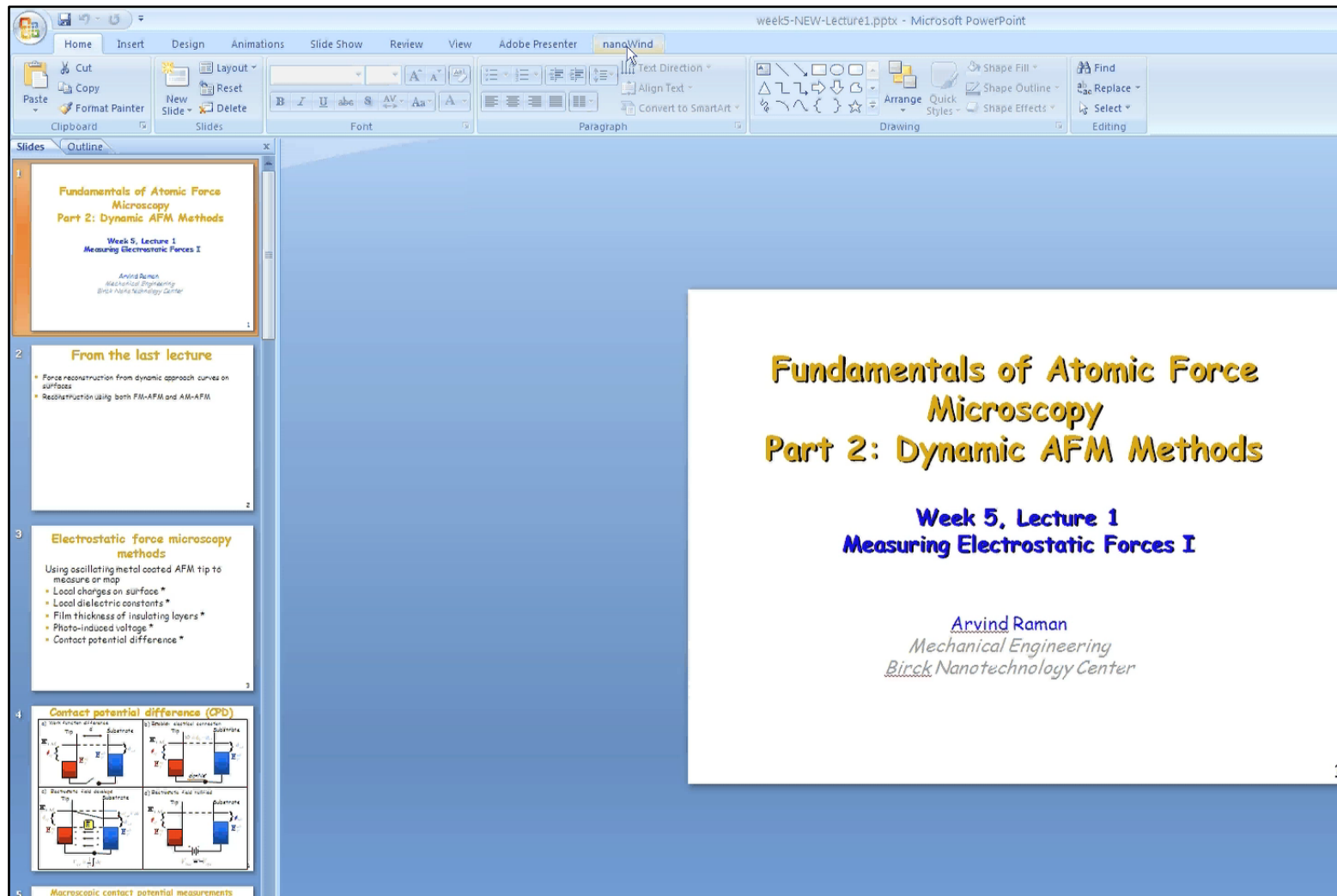
 The slide is part of a presentation with 11 slides, and the current slide is slide 6. The status bar at the bottom shows 'Office Theme' and a zoom level of 75%.



The screenshot shows the Microsoft PowerPoint 2010 interface with the nanoWind publishing window open. The nanoWind window displays the following information:

- Title:** nanoHUB U Fundamentals of AFM II/
- Web Title:** nanoHUB U Fundamentals of AFM II/Lecture 5.1: Measuring Electrostatic Forces I
- Table of Contents:**
 - 009.01: Schematic KFM technique: Copying content... done.
 - 010.01: Early results: Copying content... done.
 - Generating table of contents... done.
 - Processing scripts... done.
 - Packing to zip... done.
 - Contents saved at: C:\Documents and Settings\3ksmn64\Desktop\2012.11.12-P2-W5-L1-Raman-wind
 - Finished.
- Progress Bar:** A green progress bar is shown at the bottom of the nanoWind window, indicating the completion of the publishing process.
- Buttons:** 'Pre-publish Check' and 'Publish' buttons are visible at the bottom right of the nanoWind window.





The screenshot shows a Microsoft PowerPoint window with the title bar "week5-NEW-Lecture1.pptx - Microsoft PowerPoint". The ribbon includes "Home", "Insert", "Design", "Animations", "Slide Show", "Review", "View", "Adobe Presenter", and "nanoWind". The "nanoWind" ribbon has tabs for "Clipboard", "Slides", "Font", "Paragraph", "Drawing", and "Editing".

The slide content is as follows:

Fundamentals of Atomic Force Microscopy

Part 2: Dynamic AFM Methods

Week 5, Lecture 1
Measuring Electrostatic Forces I

Arvind Raman
Mechanical Engineering
Birck Nanotechnology Center

The slide number "1" is visible in the bottom right corner of the slide area.

Video demo ~7:00.



- Apple Keynote now supported!!!

Keynote exports slide images including animation steps
Keynote export to Powerpoint

Powerpoint only used to hold the presentation structure



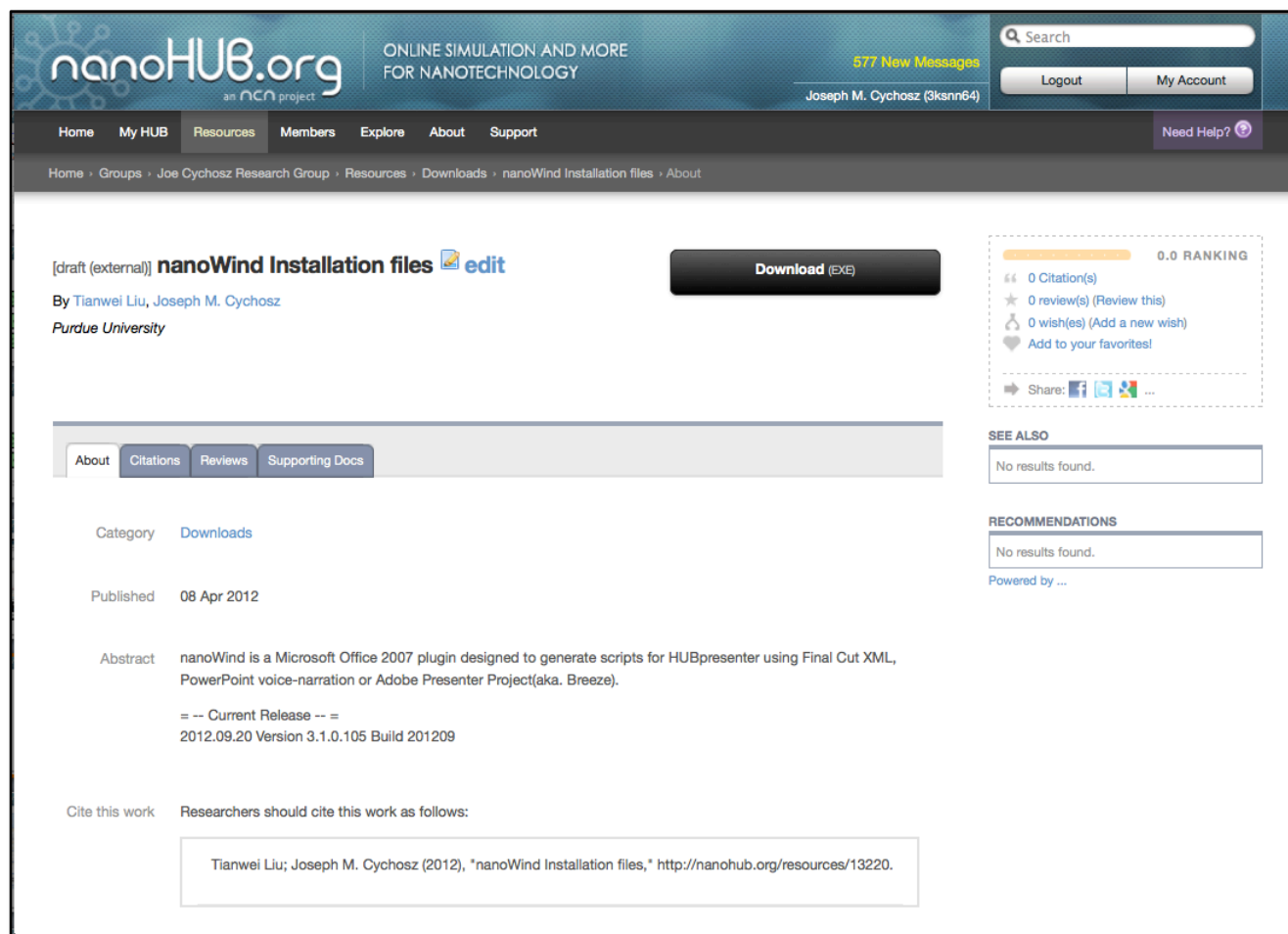
- Adobe PDF

Screen capture slides

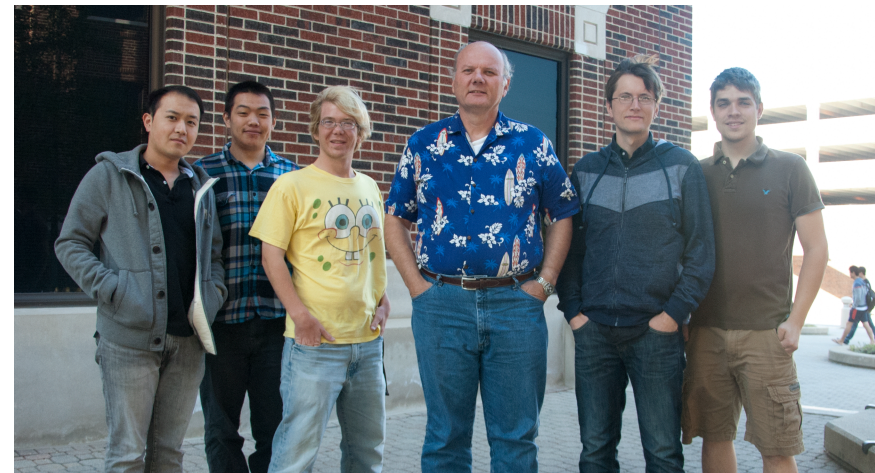
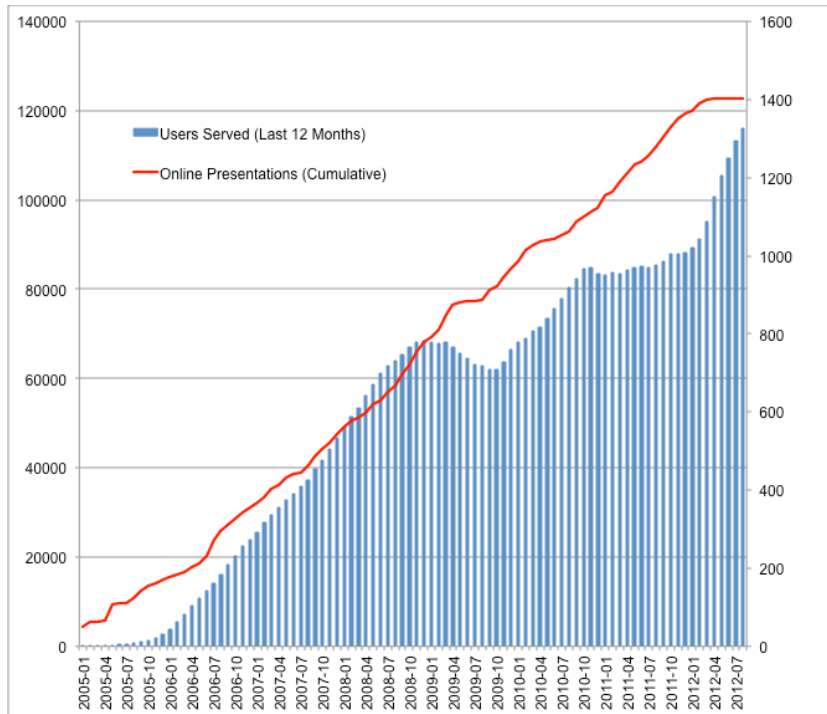
Wondershare: Free PDF to PPT Online

<http://www.free-pdf-toppt.com/>

Available on nanoHUB.org at:
<http://nanohub.org/resources/13220>



The screenshot shows the nanoHUB.org website interface. At the top, there is a navigation bar with the nanoHUB.org logo, the text "ONLINE SIMULATION AND MORE FOR NANOTECHNOLOGY", a search bar, and user options like "Logout" and "My Account". Below the navigation bar, there is a breadcrumb trail: "Home > Groups > Joe Cychosz Research Group > Resources > Downloads > nanoWind Installation files > About". The main content area displays the resource title "[draft (external)] nanoWind Installation files" with an "edit" link and a "Download (EXE)" button. The author information is "By Tianwei Liu, Joseph M. Cychosz" and "Purdue University". There are tabs for "About", "Citations", "Reviews", and "Supporting Docs". The "About" tab is selected, showing the category "Downloads", the publication date "08 Apr 2012", and an abstract: "nanoWind is a Microsoft Office 2007 plugin designed to generate scripts for HUBpresenter using Final Cut XML, PowerPoint voice-narration or Adobe Presenter Project(aka. Breeze).". Below the abstract, it says "= -- Current Release -- =" and "2012.09.20 Version 3.1.0.105 Build 201209". There is a "Cite this work" section with the text "Researchers should cite this work as follows:" and a text box containing the citation: "Tianwei Liu; Joseph M. Cychosz (2012), *nanoWind Installation files,* http://nanohub.org/resources/13220." On the right side, there is a "0.0 RANKING" section with options for "0 Citation(s)", "0 review(s) (Review this)", "0 wish(es) (Add a new wish)", and "Add to your favorites!". There are also "SEE ALSO" and "RECOMMENDATIONS" sections, both showing "No results found." and "Powered by ...".



Tianwei "David" Liu, Zhipeng Laing, Carl Sommer, Joe Cychosz, Rick Desutter, Mike Hlava, (not shown) Mario Hernandez

And the HUBzero Team

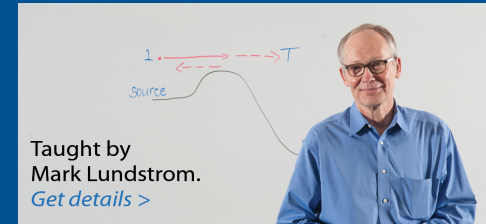
**A quality online learning experience requires paying attention to the details.
There are a lot of details.**

www.nanohub.org/u



5-WEEK ONLINE COURSES

NANOSCALE TRANSISTORS

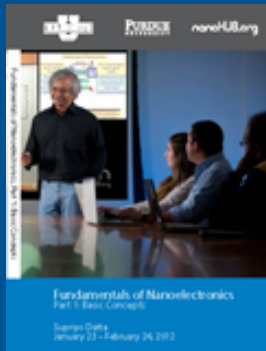


Coming This Fall – Registration Now Open

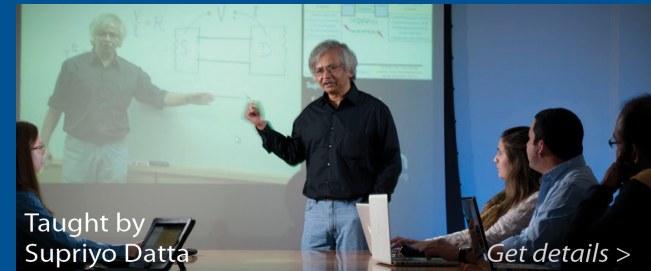


FUNDAMENTALS ATOMIC FORCE MICROSCOPY

Part 2 “Dynamic AFM” Starts Soon – Registration Now Open



FUNDAMENTALS NANO ELECTRONICS



Now Available for Self Paced Study – Registration Open
(Also available on DVD with free online access)