

2013

Microscopy & Microanalysis 2013

August 4–8, 2013

Indianapolis, IN

www.microscopy.org

Denver X-ray Conference

August 5–9, 2013

Westminster, CO

www.dxcicdd.com

EMAG 2013

September 3–6, 2013

University of York, UK

emag-iop.org

FEMMS 2013

September 8–13, 2013

Lorne, Victoria, Australia

<http://mccem.monash.edu.au/news-activities/femms-2013.html>

Histotechnology

September 20–26, 2013

Providence, RI

www.nsh.org

CIASEM 2013

September 24–28, 2013

Cartagena, Columbia

ciasem2013.com/index_ing.html

Neuroscience

November 9–13, 2013

San Diego, CA

www.sfn.org/am2013

2014

Microscopy & Microanalysis 2014

August 3–7, 2014

Hartford, CT

www.microscopy.org

2015

Microscopy & Microanalysis 2015

August 2–6, 2015

Portland, OR

www.microscopy.org

2016

Microscopy & Microanalysis 2016

July 24–28, 2016

Columbus, OH

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2017

Microscopy & Microanalysis 2017

July 23–27, 2017

St. Louis, MO

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2018

Microscopy & Microanalysis 2018

August 5–9, 2018

Baltimore, MD

www.microscopy.org

More Meetings and Courses

Check the complete calendar near the back of this magazine and in the MSA journal *Microscopy and Microanalysis*.

Carmichael's Concise Review

A Boy and His Atom

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There are certainly “big movies” such as *Gone with the Wind* and “small movies” such as *Beasts of the Southern Wild*, but Andreas Heinrich, Chris Lutz, Susanne Baumann, and Ileana Rau at IBM literally have set a new Guinness World Record™ for the smallest movie ever made. Heinrich et al. used a remotely operated two-ton scanning tunneling microscope to manipulate carbon monoxide molecules into a pattern, then capture the image (at a magnification of about 100,000,000×!), then move a few atoms and capture another image, and so on. This was done at 268 degrees below zero Celsius. Then approximately 250 images were assembled into a stop-action movie accompanied by cute music that lasts a little over a minute [1]. The “boy” appears to be composed of 88 individual atoms. He bounces a “ball” (a single atom) off a wall in a minuscule game of “handatom,” which is reminiscent of the early video game “Pong.” Then he bounces on a tiny trampoline. The movie concludes with a tasteful mention of IBM.

According to Ari Entin, another member of the team at IBM, they made this movie because they really wanted to use it as a conversation starter to get children and the general public excited about science, math, and technology. They hope this movie inspires more people to become scientists and technologists. The world needs more professionals in these fields to encourage future innovations.



Figure 1: A frame from *A Boy and His Atom*.

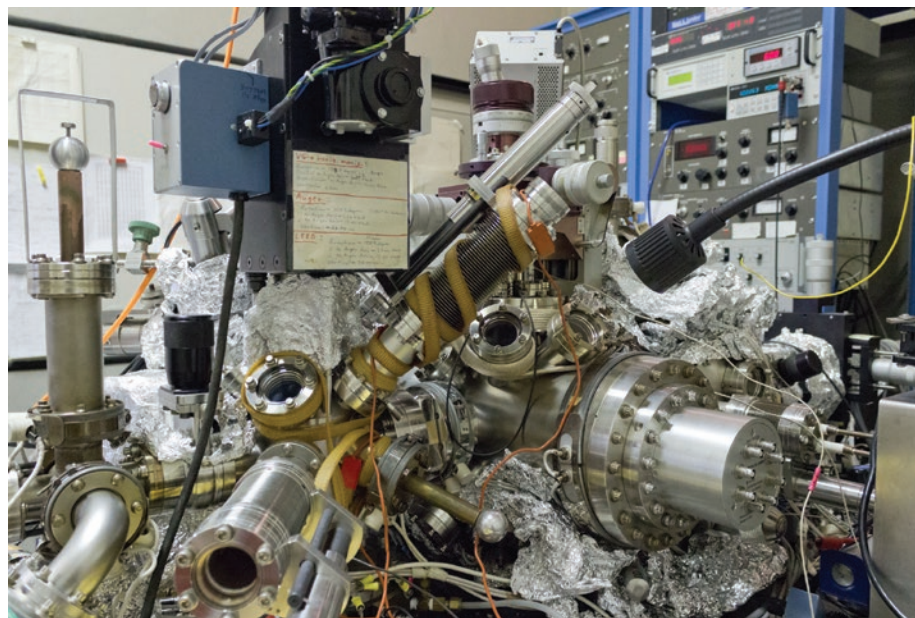


Figure 2: The STEM used to capture images for *A Boy and His Atom*.

References

- [1] IBM, *A Boy and His Atom: The World's Smallest Movie*, <http://ibmworldssmallest-movie.tumblr.com/>.
- [2] The author gratefully acknowledges Dr. Ari Entin for reviewing this article.



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