



## Science and Technology of Materials, Interfaces, and Processing

### Topical Areas

Biomaterials  
Environmental S&T  
Magnetic Materials  
Manufacturing S&T  
Materials Characterization  
Materials Processing  
MEMS  
Microelectronic Materials  
Nanometer-Scale S&T  
Plasma S&T  
Surface Engineering  
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THE BIRTH OF RADIO BROADCASTING -- SAN JOSE, 1909 -- AVS 56th  
International Symposium & Exhibition Features a Talk on the Earliest  
Days of Radio

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### FOR IMMEDIATE RELEASE

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November 6, 2009 -- The very early days of radio broadcasting will be described next week at the AVS 56th International Symposium & Exhibition in San Jose, CA by author and researcher Michael Adams of San Jose State University. Adams is available for interviews on the subject, and a photograph depicting the early studio in 1912 is available for use by media outlets.

Historians traditionally consider the age of radio broadcasting to have begun in 1920, with a transmission of election returns to a wide audience. This was carried out by the first fully licensed radio station, KDKA, owned by the Westinghouse Corporation. The broadcasts transmitted from KDKA were not the first to fill the air waves, however.

As Adams will report next week at the AVS 56th International Symposium & Exhibition, that honor goes to a college professor named Charles Herrold, who in 1909 began transmitting talk and music to a small audience of friends and colleagues in the San Jose area who listened in on home-made crystal radio sets. Herrold was the first true radio broadcaster, says Adams, and this year marks the 100th anniversary of radio broadcasting.

Herrold advertised his content in local newspapers, and he broadcast programming on most days from 1909 until 1917. His station was licensed in 1921 under the call letters KQW. Later still, in 1949, the station became WCBS in San Francisco. In the early years, his broadcasts would

often consist of phonographs played over the air or readings from local newspapers.

Only a few years before Herrold's broadcasts did technology become available for reliably making radio waves robust enough for a broadcast. The breakthrough was the invention in 1906 of the vacuum tube, a device in which a tiny electrical input can be turned into a large electrical output, and one that oscillated at very high frequency. By putting such a tube into a circuit whose parameters could be adjusted (tuned), an antenna attached to the circuit could act as a receiver or transmitter of radio waves. Prior to the vacuum tube, radio waves couldn't encode much more than the dots and dashes of Morse code. Indeed, radio messages were referred to as wireless telegraphy, or just "wireless."

Adams points out that there are many reports of early radio broadcasts to multiple listeners, but many of these claims are poorly documented. Adams argues that the documentation on Herrold is more solid. One example of Adams' evidence is a newspaper message from 1910, advertizing Herrold's broadcasts: "We have given wireless phone concerts to amateur wireless men in the Santa Clara Valley." Santa Clara Valley is now what we refer to as Silicon Valley.

Adams has also written a book on the topic: "Charles Herrold, Inventor of Radio Broadcasting." He points out that one reason Herrold isn't better known is that the radio equipment he used proved to be incompatible with what came later. (For further information see <http://www.charlesherrold.org/>).

The talk "Charles Herrold, Inventor of Radio Broadcasting" is at 9:00 a.m. Monday, November 9, 2009. See: <http://www.avssymposium.org/Open/SearchPapers.aspx?PaperNumber=HI-MoM-3>

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#### INFORMATION FOR JOURNALISTS

The AVS 56th International Symposium & Exhibition lasts from November 8-13, 2009 in San Jose, CA. All meeting information, including directions to the San Jose Convention Center is at:

<http://www2.av.s.org/symposium/>

Staff reporters and freelance journalists working on assignment for major media outlets are invited to attend the conference free of charge. Journalist registration instructions can be found at:

<http://www.av.s.org/pdf/pressinvite.pdf>

USEFUL LINKS

Online press room: <http://www.av5.org/inside.press.aspx>

Searchable abstracts:

<http://www.av5symposium.org/Open/SearchPapers.aspx>

Full meeting program: <http://www.av5symposium.org/Overview.aspx>

Main meeting page: <http://www2.av5.org/symposium/AVS56/pages/info.html>

ONSITE MEETING PRESS ROOM

The AVS press room will be located in Concourse 1 of the San Jose Convention Center. Press room hours are Monday-Thursday, 8:00-5:00 pm. The phone number there is 408-271-6100. Press Kits containing company product announcements and other news will be available on CD-ROM in the press room.

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ABOUT AVS

As a professional membership organization, AVS fosters networking within the materials, processing, and interfaces community at various local, national or international meetings and exhibits throughout the year. AVS publishes four journals, honors and recognizes members through its prestigious awards program, offers training and other technical resources, as well as career services.