

June 16, 1980

# NBS UPDATE



**NBS Update** is an editor's guide to recent activities at the National Bureau of Standards, the nation's physical sciences and measurement laboratory. **Update** is published biweekly by the Public Information Division. For more information or review copies of publications, editors should call the public information contacts listed after each subject. Contacts are located in Gaithersburg, MD. (301/921-3181) and Boulder, CO. (303/499-1000 + ext. listed).

## STANDARD REFERENCE MATERIALS

**NEW SHALE OIL SRM TO IMPROVE ENVIRONMENTAL MEASUREMENTS**  
NBS has issued a new shale oil Standard Reference Material (SRM 1580) with certified concentration values for five organic pollutants. The new SRM should greatly improve the accuracy of trace level measurements of environmentally important organic compounds found in shale oil, tar sands, liquefied coal and crude petroleum. The issuance of this SRM, which was requested and partially funded by the Department of Energy's Office of Health and Environmental Research, follows several years of research at NBS to develop the analytical methods needed for measuring these types of compounds with sufficient accuracy. The methods developed for certification of this reference material combine the use of classical acid-base extraction, high-performance liquid chromatography, gas chromatography and mass spectrometry. The new SRM should help health scientists, process control engineers and regulatory officials to establish valid methodologies for measuring trace organic pollutants at each stage of fuel production and use.  
MEDIA CONTACT: Gail Porter, 301/921-3181.

## PROJECT RESULTS

### SATELLITE ANTENNA MEASUREMENT COMPLETED

Researchers in the NBS Center for Electronic and Electrical Engineering have demonstrated that the Bureau's Earth Terminal Measurement System (ETMS) can be used to measure the noise of an 11.3 meter antenna. This measurement capability is important to the U.S. Army Communications Command, which sponsored the work, since it will use 11.3 meter antennas for the precision monitoring of the defense satellite communication system. The ETMS measured antenna gain/system noise temperature (G/T) at three frequencies simultaneously. This type of accurate noise measurement is needed since the information carrying capacity of a terminal is directly related to its noise.

MEDIA CONTACT: Fred McGehan, 303/499-1000, ext. 3244.



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### NEW PUBLICATIONS

#### RADON IN BUILDINGS

NBS has published the proceedings of a round table discussion of radon in buildings. The June 1979 meeting of a diverse group interested in radiation protection, radiation measurement, and building technology included five review papers and 20 brief reports on participants' current research activities and interests. Radon in Buildings (SP 581) includes those items along with an edited summary of the round table discussion. Copies of the 77-page report are available for \$3.75 from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Order by Stock No. 003-003-02196-2.  
MEDIA CONTACT: Mat Heyman, 301/921-3181.

### FILMS

#### FILM ON ~~TITANIUM-BASED DENTAL CASTINGS~~ AVAILABLE

A short NBS film, "An Experiment in Titanium-Based Dental Castings," is now available. The film reviews research studies by an American Dental Association scientist working at NBS which show the potential for titanium based castings in dental appliances as a substitute for costly gold alloys, or for other alloys such as cobalt-chromium and nickel-chromium. The casting technique demonstrated in the film uses commercially available equipment to fabricate dental appliances from a relatively inexpensive titanium-based material. Titanium ores which can be used to make this material are abundant in the United States and the Western Hemisphere. To obtain the film on free loan, contact: Modern Talking Pictures, 5000 Park St. North, St. Petersburg, Florida, 33709--phone, 813/541-6661. Also for sale through the National Audio Visual Center, General Services Administration, Washington, D.C. 20409.  
MEDIA CONTACT: Gail Porter, 301/921-3181.

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