

## North Texas Section Co-Hosts Speaker on High $T_c$ Thin Films

The North Texas Materials Characterization Society and the International Society of Hybrid Microelectronics were co-hosts to Alex de Lozanne during a joint meeting held October 5, 1988. An assistant professor in the Department of Physics, University of Texas at Austin, de Lozanne spoke on the "Synthesis and Characterization of Thin Films of High Temperature Superconductors."

Besides reviewing the basic concepts of superconductivity and describing some of the difficult materials problems to be solved, de Lozanne described the thin film research in his laboratory. The research involves the synthesis of thin films of YBa-CuO by co-evaporation of the pure elements. Differential pumping is used to achieve a high oxygen pressure on the growing surface yet maintain low pressure at the sources. In addition, the oxygen is plasma excited and fed through a nozzle directed at the substrates. The method, said de Lozanne, allows preparation of films with process temperatures as low as 500°C without annealing. The films have

been characterized by x-ray diffraction, SEM, TEM, STM, EDS, WDS, resistivity, and critical currents.

## December Topic is Bacterial Adhesion to Nonbiological Surfaces

The featured speaker at the December 13, 1988 meeting of the North Texas Materials Characterization Society was Madilyn Fletcher of the Center of Marine Biotechnology, University of Maryland. Fletcher explored the major factors influencing the adhesion of bacteria to nonbiological surfaces. Bacterial adhesion has serious implications when the surfaces are submerged man-made structures such as ships or offshore platforms, industrial pipelines or heat exchangers or biomaterials used for implant or prostheses.

Fletcher explained why the process is so complex and dependent on the physicochemical interactions between cell and surface, which are conditioned by variable biological processes. Her talk dealt with such major influences as substratum factors (e.g., surface charge and energy), medium properties (e.g., surface tension, dissolved solutes, bacterium surface chemistry, and bacterial physiological processes.

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## *In the next issue:*

► Guest Editors Christopher M. Stevenson (Archaeological and Historical Consultants, Inc.) and Christine A. Prior (Radiocarbon Dating Lab., University of California) present five articles on "Microscopic Analysis in Archaeology."

► C. William Verity, U.S. Secretary of Commerce during the Reagan administration, talks about "Technology: Watchword for the Economy in the 1990s" and about the new Technology Administration and Undersecretary for Technology in the Commerce Department.

► 1989 MRS Spring Meeting Preview