COMMERCIALIZATION

UMIST DEVELOPS AUTOMATED DNA SEQUENCER

MANCHESTER, U.K.—Scientists at the University of Manchester Institute of Science and Technology (UMIST) have developed a working prototype of an automated DNA sequencer. Described in the Research section of this issue of *Bio/Technology*, their equipment specifically automates Sanger reactions, which take advantage of chain-terminating dideoxynucleotides (see *Bio/Technology* **3**:395, May '85).

The British Technology Group (BTG) owns the rights to UMIST's work and is seeking to license it. Reportedly, Beckman Instruments (Sunnyvale, CA) is interested in licensing the system on a non-exclusive basis, but no deal has yet been set.

Although UMIST's William J. Martin and his colleagues report in this issue that their apparatus is capable of sequencing 12 templates in 45 minutes, they now have boosted this number to 36 templates in 50 minutes. "This is faster than even an expert sequencer can carry out the process," says Martin.

He adds that the equipment—scheduled for demonstration at September's Analyticon 85 conference in London—could be available commercially in about two years. With a price tag of about £25,000 ($35,000), it could be comparable in cost to a high-quality centrifuge. Martin points out that graduate students are no longer content to do full-time sequencing because it won't earn them their degrees. "That particular source of slave labor has vanished," he reports. "The time for automation has arrived." **—Arthur Klausner**

HELSINKI CONFERENCE

INDIAN BIOCONVERSION PLANT

HELSINKI—The Indian government is financing construction of a major new bioconversion facility in New Delhi. Now being erected in the Biochemical Engineering Research Centre at the Indian Institute of Technology, it is designed to carry out an integrated process of solvent delignification of lignocellulosic residues and simultaneous saccharification and fermentation.

Participants at the meeting here heard G. K. Chotani describe the 450-liter fermentor, which is designed to handle about 200 kg of rice straw per day and yield 50 liters of ethanol (95% v/v), 100 kg of single-cell protein for use as an animal feed supplement, and 23 kg of lignin as a by-product.

Pretreatment will separate nearly 80 percent of the lignin and 90 percent of the hemicellulose from the straw. Delignification will occur by way of a two-stage aromatic organic acid-based process in which autohydrolysis at 170°C is followed by lignin extraction by an ethanol-water mixture. Hydrolysis of the cellulose and fermentation of the released sugars by *Candida acidothermophilum* will take place at atmospheric pressure and 40°C. During the final step, hemicellulose sugars released during pretreatment are converted to single-cell protein. **—Bernard Dixon**