

INSTRUCTIONS FOR ABSTRACT SUBMISSION

The abstract book will be printed directly from a computer file. All abstracts whether submitted electronically or on paper should have the style indicated below for uniform appearance in the abstract book. This appearance will be automatically created for abstracts submitted electronically but of course must be created by the author for paper abstracts. Abstracts on paper will be scanned and reproduced at approximately a 1:1 scale. The appropriate layout is indicated below.

THIS DIMENSION MUST BE PRESERVED FOR EVERY ABSTRACT

6.75 in. (=17.1 cm)

OBSERVATION AND ANALYSIS OF ION-PAIR TRANSITIONS OF I₂ COOLED IN A SUPERSONIC FREE-JET EXPANSION

J. TELLINGHUISEN, Department of Chemistry, Vanderbilt University, Nashville, TN 37235; X. ZHENG, S. FEI, AND M.C. HEAVEN Department of Chemistry, Emory University, Atlanta, GA 30322.

The A' state of I₂ was observed for the first time in a free-jet expansion, where it was prepared by ArF laser excitation of I₂/Ar mixtures close to the nozzle^a. Twenty-seven bands in the $v'' = 0$ progression of the $D' - A'$ transition were studied by laser excitation spectroscopy, leading to the following improved constants (cm⁻¹) for the A' and D' states:

$$B_0'' = 0.028054, B_e' = 0.020526, \alpha_e' = 5.3 \times 10^{-5}, \\ \omega_e' = 103.953, \omega_e x_e' = 0.2097, \omega_e y_e' = 2.687 \times 10^{-4}.$$

Many bands of the $\beta - A$ transition have also been observed. These originate from $A, v'' = 0$, and terminate on levels with $25 \leq v' \leq 68$ of the β state. Full analyses of both band systems will be presented.

^aJ. Tellinghuisen, S. Fei, X. Zheng, and M.C. Heaven, Chem. Phys. Lett. **176**, 373 (1991).

Scheduling information for Symposium office use only

Time required: 15, 10, or 5 min.

Number of recommended session category: _____

Comment: Additional information about abstract, helpful for scheduling (optional)

THIS SAMPLE ABSTRACT GIVES THE REQUIRED FORMAT. IT WILL BE AUTOMATICALLY GENERATED FOR ELECTRONIC SUBMISSION

PAPER ABSTRACTS WILL BE SCANNED ELECTRONICALLY. USE 10pt FONT SIZE OR EQUIVALENT

IMPORTANT POINTS TO NOTE

1. If submitting by the traditional paper method, please send a total of **two** copies of each abstract, at least one of high quality for electronic reproduction.
2. Underline the name of the person presenting the paper.
3. Remember to indicate in the comment line if the speaker is to be considered for the Rao Prize (see overleaf for complete instructions).
4. **DEADLINE FOR RECEIPT OF ALL ABSTRACTS IS MARCH 1, 2003.**
5. For the time of your presentation, check the program, available by April 15 on our WWW site.

SESSION CATEGORIES

- | | | |
|----------------------------------|-------------------------|--|
| 1. Electronic (large molecules) | 6. Raman | 11. Condensed Phase |
| 2. Electronic (small molecules) | 7. Microwave | 12. Mini-symposium: Astronomical Observations |
| 3. Theory (quantum calculations) | 8. Jet and Beam Spectra | 13. Mini-symposium: Atmospheric Chemistry/Spectroscopy |
| 4. Theory (other) | 9. Radicals and Ions | 14. Mini-symposium: Condensed Phase FIR/microwave |
| 5. Infrared | 10. Matrix | |

THIS DIMENSION MUST NOT EXCEED 4.25 in. (=10.8 cm)