

**INSTITUTE OF
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SCIENCES AND
TECHNOLOGY**

**Contamination Control Division
Recommended Practice 024.1**

IEST-RP-CC024.1

**Measuring and Reporting Vibration
in Microelectronics Facilities**

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1 SCOPE AND LIMITATIONS

1.1 Scope

Equipment used in the manufacture, measurement, and inspection of integrated circuits is sensitive to vibration and sound. It is therefore necessary to establish levels of vibration sensitivity for these facilities and to ensure that vibrations occurring in the facility or at the site at which they are located are below those levels.

Such equipment will be referred to as process tools in this Recommended Practice.

This RP is intended to provide guidance for use in the microelectronics industry. However, it may also be applicable in pharmaceutical and biological research, metrology laboratories, and other contexts in which vibration control is important.

This RP provides guidelines for conducting vibration measurements and reporting vibration data, specifically for:

- Selecting suitable instrumentation and hardware for use in vibration measurements.
- Establishing sensitive process tool vibration thresholds.
- Conducting vibration measurements on sites and in facilities.
- Reporting results of vibration measurements in a uniform and consistent format.

1.2 Limitations

This Recommended Practice focuses on vibration. Although control of acoustical disturbances is equally important, it is not the subject of this RP. However, ANSI documents *S1.1*, *S1.4*, *S1.11*, and *S1.13* (see section 2) are available for those seeking guidance in measuring acoustical noise.

2 REFERENCES

- ANSI-S1.1: Acoustical Terminology, Including Mechanical Shock and Vibration.* American National Standards Institute.
- ANSI-S1.4: Specification for Sound Level Meters.* American National Standards Institute.
- ANSI-S1.11: Specification for Octave-Band and Fractional-Band Analog and Digital Filters.* American National Standards Institute.
- ANSI-S1.13: Methods for the Measurement of Sound Pressure Levels.* American National Standards Institute.
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- Biggs, J.M.: *Introduction to Structural Dynamics.* McGraw-Hill, New York: 1964.
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