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Metal-to-Ceramic Seals: A Literature Survey

A survey of the unclassified literature on the technology of metal-to-ceramic seals was conducted in order to obtain information that would further the design and development of such seals for nuclear thermionic converters. Previous surveys, though extensive, did not cover recent progress in this technology.

The more recent data available covers such topics as radiation damage to ceramics, alkali metal corrosion, active-metal brazing techniques, and graded cermet seal characteristics, all of which are particularly relevant to the field of thermionics. These data are reviewed, and a discussion of that review is presented, along with a summary of the earlier work in the field.

The report covers the topics mentioned, as well as diffusion bonding, techniques currently used in thermionic diodes, various types of brazing techniques, corrosion testing of seals and components, and certain types of seals now being used.

Reference:

State-of-the-Art Review of Ceramic-to-Metal Joining, AFML-TR-65-143, Air Force Materials Laboratory, Wright-Patterson AFB, Ohio. May 1965.

Note:

The following documentation may be obtained from:

National Technical Information Service
Springfield, Virginia 22151
Single document price \$3.00
(microfiche \$0.95)

Reference:

JPL Technical Report 34-1420 (N70-19773),
Metal-to-Ceramic Seals for Thermionic Converters: A Literature Survey

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No patent action is contemplated by NASA.

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