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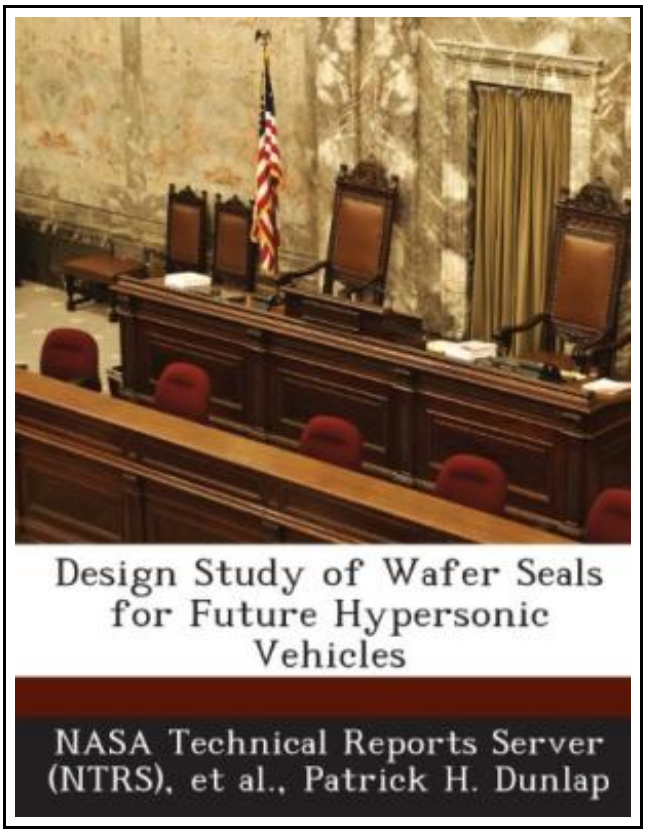

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BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 26 pages. Dimensions: 9.7in. x 7.4in. x 0.1in.Future hypersonic vehicles require high temperature, dynamic seals in advanced hypersonic engines and on the vehicle airframe to seal the perimeters of movable panels, flaps, and doors. Current seals do not meet the demanding requirements of these applications, so NASA Glenn Research Center is developing improved designs to overcome these shortfalls. An advanced ceramic wafer seal design has shown promise in meeting these needs. Results from a design of experiments study performed on this seal revealed that several installation variables played a role in determining the amount of leakage past the seals. Lower leakage rates were achieved by using a tighter groove width around the seals, a higher seal preload, a tighter wafer height tolerance, and a looser groove length. During flow testing, a seal activating pressure acting behind the wafers combined with simulated vibrations to seat the seals more effectively against the sealing surface and produce lower leakage rates. A seal geometry study revealed comparable leakage for full-scale wafers with 0. 125 and 0. 25 in. thicknesses. For applications in which lower part counts are desired, fewer 0. 25-in. -thick wafers may be able to be used in place of 0. 125-in. -thick wafers while achieving similar performance. Tests performed on wafers with a rounded edge (0. 5 in. radius) in contact with the sealing surface resulted in flow rates twice as high as those for wafers with a flat edge. Half-size wafers had leakage rates approximately three times higher than those for full-size wafers. This item ships from La Vergne,TN. Paperback.

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