

# Christopher C.Daniels

## Curriculum Vitae

### CURRENTAFFILIATION

Professor of Engineering Practice  
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### EDUCATION

2000	Ph.D. Mechanical Engineering	The University of Akron
1996	M.S. Mechanical Engineering	The University of Akron
1994	B.S. Mechanical Engineering	The University of Akron

### PROFESSIONAEXPERIENCE

2007 – 2013	National Aeronautics and Space Administration µ“Advanced Aerospace Seals Research” µPrincipal investigator, 85%	\$6,559,599
2004 – 2007	National Aeronautics and Space Administration µ“Advanced Sealing Technologies Development” µPrincipal investigator, 50%	\$432,980
2003 – 2004	National Aeronautics and Space Administration µ“Emerging Sealing Technologies” µCo-principal investigator, 50%	\$126,651
2000 – 2003	National Aeronautics and Space Administration µ“Advanced Seal Development” µPrincipal investigator, 100%	\$323,829

## PATENTS

2019      Issued      Shrouded seal assembly.



Conference Papers with Proceedings

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13. Garafolo, N. and C. Daniels. 2013. Geometrical consideration of permeation in elastomers. *Proceedings of the ASME 2013 Fluids Engineering Division Summer Meeting*, Incline Village, NV. doi:10.1115/FEDSM2013-16059
14. Garafolo, N. and C. Daniels. 2012. An empirical investigation of seal-interface leakage of an elastomer face seal *Proceedings of the ASME 2012 Fluids Engineering Division Summer Meeting*. Rio Grande, PR. The American Society of Mechanical Engineers. doi:10.1115/FEDSM2012-72026
15. Oravec, H., J. Wasowski, and C. Daniels. 2012. The effect of temperature and dwell on the adhesion force of silicone elastomer seals *Proceedings of the 50th AIAA Aerospace Sciences Meeting*, AIAA 2012-0803, Nashville, TN doi: 10.2514/6.2012-803
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17. Garafolo, N. and C. Daniels. 2011. The quantification of seal-interface leakage of an elastomer face seal. *Proceedings of the ASME 2011 International Mechanical Engineering Congress & Exposition*, Denver, CO. 1: 245-253. doi:10.1115/IMECE2011-63620
18. Oravec, H., Panickar, M., J. Wasowski, and C. Daniels. 2011. Influence of elastomer compound and test temperature on the compression force of candidate space seals: A preliminary study. *Proceedings of the 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2011-5709, San Diego, CA. doi: 10.2514/6.2011-5709
19. M. Conrad, C. Daniels, B. Hartzler, and M. Panickar. 2011. Retention failure forces in candidate space docking seals *Proceedings of the 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2011-5639, San Diego, CA. doi: 10.2514/6.2011-5639
20. Daniels, C., J. Wasowski, M. Panickar, and I. Smith. 2011. Leak rate performance of three silicone elastomer compounds after ground-simulated and on-orbit environment exposures. 3rd AIAA Atmospheric Space Environments Conference, AIAA 2011-3823, Honolulu, HI. doi: 10.2514/6.2011-3823
21. Garafolo, N., and C. Daniels. 2011. Contamination simulation of elastomer space seals with foreign object debris. 3rd AIAA Atmospheric Space Environments Conference, AIAA 2011-3674, Honolulu, HI. doi: 10.2514/6.2011-3674
22. Hartzler, B., M. Panickar, J. Wasowski, and C. Daniels. 2011. Comparison of adhesion and retention forces for two candidate docking seal elastomers *Proceedings of the 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, AIAA 2011-2158, Denver, CO and as NASA/CRA 2011-217109. doi: 10.2514/6.2011-2158
23. Panickar, M., J. Wasowski, and C. Daniels. 2011. Adhesion of an elastomer seal to metal and its mitigation with atomic oxygen pretreatment. *Proceedings of the 49th AIAA Aerospace Sciences Meeting*, AIAA 2011-426, Orlando, FL. doi: 10.2514/6.2011-426
24. Bastrzyk, M., and C. Daniels. 2010. Compression force response and leak rate quantification of candidate static silicone space seals *Proceedings of the 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA-2010-6908, Nashville, TN. doi: 10.2514/6.2010-6908
25. Dunlap, P., B. Steinert, C. Daniels, J. Wasowski, M. Robbie, G. Drak, Erker, J. Mayer. 2010. Full-scale system for quantifying loads and leak rates of seals for space applications *Proceedings of the 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2010-6987, Nashville, TN.

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27. Penney, N., J. Wasowski, and C. Daniels. 2010. Temperature and atomic oxygen effects on helium leak rates of a candidate main interface seal. *Proceedings of the 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2010-6986, Nashville, TN. doi: 10.2514/6.2010-6986
28. Bastrzyk, M., J. Wasowski, and C. Daniels. 2010. Non-contact compression set testing and dimensional measurements of space seals: Application of laser technology. 4th Japan-US Symposium on Emerging NDE Capabilities for a Safer World, M2-1, Maui, HI.
29. Conrad, M., C. Daniels, and R. Martin. 2010. Two nondestructive evaluation techniques for inspection of composite silicone-metal aerospace seals. 4th Japan-US Symposium on Emerging NDE Capabilities for a Safer World, M4-2, Maui, HI.
30. Garafolo, N., and C. Daniels. 2010. Comprehensive mass point leak rate technique. Part I: Methodology with uncertainty and experimental error analyzes. 4th Japan-US Symposium on Emerging NDE Capabilities for a Safer World, M4-4, Maui, HI.
31. Daniels, C., and N. Garafolo. 2010. Comprehensive mass point leak rate technique. Part II: Application of methodology and variable influences. 4th Japan-US Symposium on Emerging NDE Capabilities for a Safer World, M4-5, Maui, HI.
32. Bastrzyk, M., and C.

39. de Groh, H., S. Miller, I. Smith, C. Daniels, B. Steinetz. 2008. Adhesion of cured silicone elastomer seals for NASA's Crew Exploration Vehicle. *Proceedings of the 44th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2008-4625, Hartford, CT and as NASA/TM-2008-215433.
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