

Abradable / Abrasive Tip Coatings Alert

**September 29, 2022**

**IP & Knowledge Management**

[Preparation and Properties of Wear‐Resistant Carbonized‐Ceramic Composite **Coating**on Pure Aluminum Surface](https://ceramics.onlinelibrary.wiley.com/doi/abs/10.1111/ijac.14224)

Z Shao, L Chen, H Lu, [F Fan](https://scholar.google.com/citations?user=Mhg_-KMAAAAJ&hl=en&oi=sra) - International Journal of Applied …, 2022 - Wiley Online Library

5 days ago - … MAO **coating** and alleviates the **abrasive** and adhesive wear on the composite  
**coating** surface, reducing wear debris on the **coating** … **coating** is 33.91% (see Fig. 11(d)) …

[Cavitation erosion/corrosion synergy and wear behaviors of nickel-based alloy coatings on 304 stainless steel prepared by cold metal transfer](https://www.sciencedirect.com/science/article/pii/S0043164822002678)

T Zhao, S Zhang, ZY Wang, CH Zhang, DX Zhang… - Wear, 2022 - Elsevier

6 days ago - … **coating** also exhibited a higher wear resistance, and the wear mechanism was  
adhesive-**abrasive** … The wear resistance of Inconel 625 **coating** and Hastelloy C-276 **coating** …

[Investigating Al-Si base abradable material removal mechanism with axial movement in labyrinth seal system](https://eur02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fscholar.google.com%2Fscholar_url%3Furl%3Dhttps%3A%2F%2Fwww.sciencedirect.com%2Fscience%2Farticle%2Fpii%2FS0043164822002538%26hl%3Den%26sa%3DX%26d%3D15993325444559943188%26ei%3D494rY8LkEfuSy9YP1Lyz8AQ%26scisig%3DAAGBfm0jpWgWFeIBgT04L9rYwidcqDujtw%26oi%3Dscholaralrt%26hist%3DmpoAcdUAAAAJ%3A2622092723119233116%3AAAGBfm0MmgMTgt-XBNFjhDN--A1kAUlrXw%26html%3D%26pos%3D0%26folt%3Dkw&data=05%7C01%7CJeff.Barr%40linde.com%7Ce9d463deb21b424d045608da9c4f9aee%7C1562f00709a44fcb936be79246571fc7%7C0%7C0%7C637994162967982452%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=e%2BHT8p1Kw%2FGufVOaDLRgfYuC8ZwmhY65v9NWxUJlykY%3D&reserved=0)

B Zhang, M Marshall, R Lewis - Wear, 2022

Modern aeroengines employ labyrinth seal systems to seal the clearance between   
the blade tip and surrounding engine casing. Understanding of the wear mechanism   
between labyrinth fins and abradable coatings on the casing is necessary to help …

[High temperature abradable sealing coating for SiCf/SiC ceramic matrix composites](https://eur02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fscholar.google.com%2Fscholar_url%3Furl%3Dhttps%3A%2F%2Fwww.sciencedirect.com%2Fscience%2Farticle%2Fpii%2FS027288422203317X%26hl%3Den%26sa%3DX%26d%3D14037990194016935508%26ei%3DriEpY8nDN-KH6rQPnYSJmAk%26scisig%3DAAGBfm24Zp65MgoLFAi7K82rfT49AX7hcg%26oi%3Dscholaralrt%26hist%3DmpoAcdUAAAAJ%3A2622092723119233116%3AAAGBfm0MmgMTgt-XBNFjhDN--A1kAUlrXw%26html%3D%26pos%3D0%26folt%3Dkw&data=05%7C01%7CJeff.Barr%40linde.com%7C6249240dd62d4d7a8ca208da9aada7f2%7C1562f00709a44fcb936be79246571fc7%7C0%7C0%7C637992367884163034%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=w1gk4qpr%2FGls4%2BKErRO3tFOE8nZ221Fy88nWewWLyXE%3D&reserved=0)

J Huang, R Liu, Q Hu, X Guo, G Li, Y Tu, X Lu, M Xu… - Ceramics International, 2022

A study of porous YSZ abradable sealing coating (ASC) plasma-sprayed onto SiC f /SiC   
ceramic matrix composites (CMC) through the compatibility of intermediate layers is   
reported. The multilayer Si/Yb 2 Si 2 O 7 /LaMgAl 11 O 19 thermal-environmental …

[The preparation and microstructure of the filler matrix/cBN **abrasive coating on** titanium alloy](https://eur02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fscholar.google.com%2Fscholar_url%3Furl%3Dhttps%3A%2F%2Fwww.sciencedirect.com%2Fscience%2Farticle%2Fpii%2FS0167577X22014021%26hl%3Den%26sa%3DX%26d%3D15603827179489985352%26ei%3DVX8JY_zwIorwyATTu5WgDA%26scisig%3DAAGBfm19AsnposP0dwv9jS8Pioxa8wrBkQ%26oi%3Dscholaralrt%26hist%3DmpoAcdUAAAAJ%3A2622092723119233116%3AAAGBfm0MmgMTgt-XBNFjhDN--A1kAUlrXw%26html%3D%26pos%3D0%26folt%3Dkw&data=05%7C01%7CJeff.Barr%40linde.com%7Cabb90abf9d734472116508da87d2a9be%7C1562f00709a44fcb936be79246571fc7%7C0%7C0%7C637971636105935791%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=mCyA5aezCWCBdqTQ6D9OCQ6kywcHSnsp9aTYx%2BM4tEA%3D&reserved=0)

WS Gu, WH Li, SY Zhang, TG Wang, ZL Pei, SM Jiang… - Materials Letters, 2022

In order to maintain tight tolerance of aero-engine and reduce the risk of titanium fire,   
a filler matrix/cBN abrasive coating for blade tip of titanium alloy was prepared using   
vacuum brazing. The results revealed that the interfacial reaction products TiN/TiB 2 /TiB

[Elevated temperature erosion of abradable seal coating](https://eur02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fscholar.google.com%2Fscholar_url%3Furl%3Dhttps%3A%2F%2Fpub.iapchem.org%2Fojs%2Findex.php%2FJESE%2Farticle%2Fdownload%2F1388%2F1529%26hl%3Den%26sa%3DX%26d%3D6558689165223797766%26ei%3DVX8JY_zwIorwyATTu5WgDA%26scisig%3DAAGBfm3AdJX2l5NB0oM-LZkxoK9oX_jmqg%26oi%3Dscholaralrt%26hist%3DmpoAcdUAAAAJ%3A2622092723119233116%3AAAGBfm0MmgMTgt-XBNFjhDN--A1kAUlrXw%26html%3D%26pos%3D1%26folt%3Dkw&data=05%7C01%7CJeff.Barr%40linde.com%7Cabb90abf9d734472116508da87d2a9be%7C1562f00709a44fcb936be79246571fc7%7C0%7C0%7C637971636105935791%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=gdAUR9W5EM%2BSR6sKWag4F1MFNpG4eJ2ZcBGEdGxW6VE%3D&reserved=0)

B Malvi, M Roy - Journal of Electrochemical Science and Engineering, 2022

Abradable coatings are essentially sealing materials and are deposited by thermal   
spray techniques. The main function of these coatings is to control the clearance of   
the gas path of the gas turbine engines. The abradable coating prevents turbine …

[Experimental Study on the Effect of Rubbing Mode on Radial Crack Initiation in Labyrinth Seal Fins of Shrouded Turbine Blade](https://eur02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fscholar.google.com%2Fscholar_url%3Furl%3Dhttps%3A%2F%2Fwww.mdpi.com%2F2226-4310%2F9%2F8%2F441%2Fpdf%253Fversion%253D1660277625%26hl%3Den%26sa%3DX%26d%3D16991669033282878153%26ei%3D0dz6YqvNKOKSy9YPifiPoAQ%26scisig%3DAAGBfm2s_ThFfrfw5oOREdHD6Nvo1wAb1A%26oi%3Dscholaralrt%26hist%3DmpoAcdUAAAAJ%3A2622092723119233116%3AAAGBfm0MmgMTgt-XBNFjhDN--A1kAUlrXw%26html%3D%26pos%3D0%26folt%3Dkw&data=05%7C01%7CJeff.Barr%40linde.com%7Cc13928a65d9e492af22208da7f1990e4%7C1562f00709a44fcb936be79246571fc7%7C0%7C0%7C637962045029997867%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=lgrgdnBdta8trts8ctuh0EIr3NExGWGdJjGWfAf%2BA0Q%3D&reserved=0)

Y Yang, Z Mi, W Zhang, J Chang, Y Liu, B Zhong… - Aerospace, 2022

The labyrinth-honeycomb seals have been widely used in aero-engine. However,   
radial cracks appear on labyrinth seal fins of shrouded turbine blade in use. To   
clarify the rubbing mode of radial crack initiation, a high-speed rubbing test bench …

[Investigation of the Al-adhesive transfer mechanism on Ti6Al4V blade tips under high-speed rubbing in an aero-turbine engine](https://eur02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fscholar.google.com%2Fscholar_url%3Furl%3Dhttps%3A%2F%2Fwww.sciencedirect.com%2Fscience%2Farticle%2Fpii%2FS1350630722006616%26hl%3Den%26sa%3DX%26d%3D6353336398812357393%26ei%3DsNPxYvCFJcm8ywTT0rmoAw%26scisig%3DAAGBfm35XcofnZjS5mI5RyqSRbDZAu1-AA%26oi%3Dscholaralrt%26hist%3DmpoAcdUAAAAJ%3A2622092723119233116%3AAAGBfm0MmgMTgt-XBNFjhDN--A1kAUlrXw%26html%3D%26pos%3D0%26folt%3Dkw&data=05%7C01%7CJeff.Barr%40linde.com%7Cb3a73925f7ec472e301c08da79b6d55b%7C1562f00709a44fcb936be79246571fc7%7C0%7C0%7C637956123410816009%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=69O9ZaEocgyz%2B2Xg5pUkgsI8ZJB3UB1MZatSR68XRz4%3D&reserved=0)

B Wu, S Gao, R Zhang, W Xue, S Li, D Duan - Engineering Failure Analysis, 2022

The Al-hBN seal coating invariably transfers to the tip of the Ti6Al4V blade under   
high-speed rubbing, resulting in the deterioration of the power and the reliability of   
the developed aero-engine. The Al-adhesion phenomenon was reproduced using a …

[The synergistic effect of MAO-treated and PAO–graphene oil on tribological properties of Ti6Al4V alloys](https://www.sciencedirect.com/science/article/pii/S0043164822002514)

[D Zhang](https://scholar.google.com/citations?user=bA9AhAkAAAAJ&hl=en&oi=sra), X Du, A Bai, L Wang - Wear, 2022 - Elsevier

21 days ago - … The mainly wear form of Ti6Al4V is mainly adhesive, while that of the MAO  
**coating** is **abrasive**. Furthermore, the peaks of typical graphene were observed in the friction …

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