

Title (en)

Turbine engine airfoil with wrapped leading edge cooling passage

Title (de)

Turbinenschaufel mit umfassendem Vorderkantenkühlkanal

Title (fr)

Aube de turbine dotée d'un passage encerclé pour refroidissement de bord d'attaque

Publication

**EP 2392774 A1 20111207 (EN)**

Application

**EP 10005822 A 20100604**

Priority

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Abstract (en)

A turbine engine airfoil (34) includes an airfoil structure having an exterior surface (57) providing a leading edge (38). A radially extending first cooling passage (56) is arranged near the leading edge (38) and includes first and second portions. The first portion extends to the exterior surface (57) and forms a radially extending trench (48) in the leading edge. The second portion is in fluid communication with a second cooling passage (50). In one example, the second cooling passage (50) extends radially, and the first cooling passage (56) wraps around a portion of the second cooling passage (50) from a pressure side (42) to a suction side (44) between the second cooling passage (50) and the exterior surface (57). In the example, the first portion is arranged between the pressure and suction sides (42, 44). In one example, the first cooling passage (56) is formed by arranging a core in an airfoil mold. The trench is formed by the core in one example.

IPC 8 full level

**B22C 9/04** (2006.01); **B22C 9/10** (2006.01); **F01D 5/18** (2006.01)

CPC (source: EP)

**B22C 9/04** (2013.01); **B22C 9/103** (2013.01); **F01D 5/186** (2013.01); **F01D 5/187** (2013.01)

Citation (search report)

- [X] EP 1467064 A2 20041013 - UNITED TECHNOLOGIES CORP [US]
- [X] EP 1013877 A2 20000628 - UNITED TECHNOLOGIES CORP [US]
- [X] EP 2159375 A2 20100303 - UNITED TECHNOLOGIES CORP [US]
- [A] EP 0641917 A1 19950308 - UNITED TECHNOLOGIES CORP [US]
- [X] EP 1759788 A2 20070307 - UNITED TECHNOLOGIES CORP [US]

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