



Fig. 9 – macrographs of cross section

### 5. Conclusion

The investigations with the filler wire give us a better understanding of the laser cladding process. We plan to make some trials on a YAG laser because of the better interaction of the laser beam and the possibility to use an optical fiber. The advantages of the filler wire in comparison to the powder are the cleanness of the process and the efficiency. Moreover the cost of the filler material system is lower than the powder system delivery.

### 6. Bibliography

Doosun Choi and al., Fundamental Study on Rapid Tooling with Wire Technology using CO<sub>2</sub> Laser Irradiation, Proceeding of the 8 Th European Conference on Rapid Prototyping, 3et 4 mai 2000

P. H. Chong, H.C. Man, Laser Wire Cladding of Aluminium Alloy, Proceeding of ICALEO 1999 section F, pp 207- 215

L.Xue, J.-Y. Chen, C.V. Hyatt and M. Islam, Laser Cladding with Continuous Ni-Al Bronze Wire Feeding, Proceeding of ICALEO 1999 section F, pp 58-67

W. Steen, Laser Material Processing, second edition, 1998 , Springer

### Biographies

Mr Olivier Démure received his certificate of Engineer of Laser and Applications in 1999. He joined the CLFA in 1999 and he is developing laser cladding and laser sintering applications. Dr Pascal Aubry received his PhD in Computer Science in 1991 and his Research Manager Certificate in 1996. Since 1996, he is with CLFA, responsible for the robotics and process control section and in charge of aeronautics and rapid tooling applications