Claims:

1. A method of forming a curved profile of an edge on an aerofoil (4) , the curve having a profile axis, the method comprising:
   providing an aerofoil having an edge extending along a length;
   providing a fluid jet that has a Gaussian energy distribution profile;
   traversing the fluid jet along a path that substantially follows the length of the edge to machine an edge having the curved profile, the maximum energy of the fluid jet being directed to a location offset from the profile axis.
2. A method according to claim 1, wherein the Gaussian energy distribution is a normal energy distribution profile.
3. A method according to claim 1 or claim 2, wherein the offset is constant along the length of edge.
4. A method according to any preceding claim, wherein the edge profile transitions into a suction flank at one side and into a pressure surface at the other side and follows an elliptical curve, and wherein the maximum width of the leading edge in a direction perpendicular to the major axis or the ellipse being equal to the length of the minor axis of the ellipse, the offset being greater than or equal to the minor radius of the ellipse.
5. A method according to claim 4, wherein the length of the major axis has a ratio of between 1:1 and 8:1 of the length of the minor axis.
6. A method according to claim 4 or claim 5, wherein the profile axis is the major axis of the ellipse.
7. A method according to claim1, wherein the shape of the edge is determined by the Gaussian energy distribution of the fluid jet and the energy distribution is selected to provide an elliptical leading edge with a ratio of the major axis to the minor axis of 3:1 or more.
8. A method according to any preceding claim, wherein the fluid jet comprises abrasive particles.
9. A method according to claim 8, wherein the abrasive particles are added to the fluid jet at a rate of between 15 and 55 g/min.

10. A method according to claim 9, wherein the abrasive particles are added to the fluid jet at a rate of between 15 and 35 g/min.

11. A method according to claim 4, wherein the fluid jet has an axis that is directed towards a tangent of the ellipse.

12. A method according to claim 11, wherein the angle of the fluid jet axis to the major axis of the ellipse is constant as the fluid jet traverses along the path.

13. A method according to any preceding claim, wherein the traverse of the fluid jet is followed by traverse of a second fluid jet.

14. A method according to claim 13, wherein the maximum energy of the second fluid jet is directed to a location that has a greater offset from the axis than the first fluid jet.

15. A method according to any preceding claim, wherein the edge is a leading edge.

Claims:

1. A method of forming a curved profile of an edge on an aerofoil (4) , the curve having a profile axis, the method comprising:
providing an aerofoil having an edge extending along a length;
providing a fluid jet that has a Gaussian energy distribution profile;
traversing the fluid jet along a path that substantially follows the length of the edge to machine an edge having the curved profile, the maximum energy of the fluid jet being directed to a location offset from the profile axis.
2. A method according to claim 1, wherein the Gaussian energy distribution is a normal energy distribution profile.
3. A method according to claim 1 or claim 2, wherein the offset is constant along the length of edge.
4. A method according to any preceding claim, wherein the edge profile transitions into a suction flank at one side and into a pressure surface at the other side and follows an elliptical curve, and wherein the maximum width of the leading edge in a direction perpendicular to the major axis or the ellipse being equal to the length of the minor axis of the ellipse, the offset being greater than or equal to the minor radius of the ellipse.
5. A method according to claim 4, wherein the length of the major axis has a ratio of between 1:1 and 8:1 of the length of the minor axis.
6. A method according to claim 4 or claim 5, wherein the profile axis is the major axis of the ellipse.
7. A method according to claim1, wherein the shape of the edge is determined by the Gaussian energy distribution of the fluid jet and the energy distribution is selected to provide an elliptical leading edge with a ratio of the major axis to the minor axis of 3:1 or more.
8. A method according to any preceding claim, wherein the fluid jet comprises abrasive particles.
9. A method according to claim 8, wherein the abrasive particles are added to the fluid jet at a rate of between 15 and 55 g/min.

10. A method according to claim 9, wherein the abrasive particles are added to the fluid jet at a rate of between 15 and 35 g/min.

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13. A method according to any preceding claim, wherein the traverse of the fluid jet is followed by traverse of a second fluid jet.

14. A method according to claim 13, wherein the maximum energy of the second fluid jet is directed to a location that has a greater offset from the axis than the first fluid jet.

15. A method according to any preceding claim, wherein the edge is a leading edge.