CLAIMS:

1. An electron multiplier for use in an ion detector, the electron multiplier comprising a series of discrete electron emissive surfaces configured to provide an electron amplification chain, wherein the series of discrete electron emissive surfaces are disposed about a central axial region of the electron multiplier, and one or more baffles extend into the central axial region.~~the electron multiplier being configured~~ so as to inhibit or prevent a contaminant from entering into, or passing partially through, or passing completely through the central axial region~~electron multiplier~~.

~~2. The electron multiplier of claim 1 comprising one or more baffles configured so as to prevent or inhibit a contaminant from entering into, or passing partially through, or passing completely through the electron multiplier.~~

2~~3~~. The electron multiplier of claim 1~~2~~, wherein the one or more baffles are configured so as to decrease vacuum conductance of the electron multiplier compared to the same or similar electron multiplier not having one or more baffles.

3~~4~~. The electron multiplier of claim 1 or claims 2~~any one of claims 1 to 3~~, wherein a linear path is defined within the electron multiplier, the linear path allowing for a contaminant to enter into, or pass partially through, or pass completely through the electron multiplier but for the presence of the one or more baffles.

4~~5~~. The electron multiplier of any one of claims 1 to 3~~4~~, wherein the series of discrete electron emissive surfaces are disposed about a central axis of the electron multiplier, and wherein the one or more baffles approach, abut or intersect with the central axis.

~~6. The electron multiplier of any one of claims 1 to 5, wherein the series of discrete electron emissive surfaces are disposed about a central axial region of the electron multiplier, and wherein the one or more baffles extend into the central axial region.~~

5~~7~~. The electron multiplier of any one of claims 1 to 4~~claim 6~~, wherein the one or more baffles completely traverse the central axial region.

6~~8~~. The electron multiplier of claim 5~~7~~, wherein the one or more baffles extend from a housing of the electron multiplier, or from an existing structure within the electron multiplier, or from a dedicated structure within the electron multiplier.

7~~9~~. The electron multiplier of any one of claims 1 to 6~~8~~, wherein each of the series of discrete electron emissive surfaces is or is a part of a dynode, and one of the one or more baffles extends from the dynode.

8~~10~~. The electron multiplier of claim 7~~9~~, wherein the dynode has a peripheral region and the one or more baffles extend from the peripheral region.

9~~11~~. The electron multiplier of claim 9 or claim 10, wherein the dynode has, in cross-section, a first section and a third section each of which extend generally toward a central axis or central region of the electron multiplier, the first and third section being joined by a second section, and wherein (i) the baffle extends from the first section or the third section, or (ii) the first section or the third section are extended so as to function in least in part as a baffle.

10~~12~~. The electron multiplier of claim 9~~11~~, wherein the first section is, in cross-section, longer than the third section.

11~~13~~. The electron multiplier of claim 10~~12~~, wherein the second section has a length, in cross-section, that is intermediate to the length of the first section and the second section.

12~~14~~. The electron multiplier of any one of claims 7~~9~~ to 11~~13~~, wherein the dynode is fabricated from a single piece of material, and the first and third sections of the dynode are each defined by a bend at the respective interface with the second section, and wherein the first and third sections extend generally toward a central axis or a central region of the electron multiplier.

13~~15~~. The electron multiplier of any one of claims 7~~9~~ to 12~~14~~, wherein each of the series of discrete electron emissive surfaces is a dynode, the series of dynodes being arranged in an interleaving manner.

14~~16~~. The electron multiplier of any one of claims 10~~12~~ to 13~~15~~, wherein the first section of a dynode interleaves with the first section of the next dynode in the amplification chain.

15~~17~~. The electron multiplier of clam 14~~16~~, wherein the first section of the dynode is the section most proximal to electron multiplier input.

16~~18~~. The electron multiplier of claim 15~~17~~, wherein the first section of a dynode interleaves with the first section of the next dynode in the amplification chain so as to provide overlapping between the first and second sections of at least about 0.1 mm, 0.2 mm, 0.3 mm, 0.4 m, 0.5 mm, 0.6 mm, 0.7 mm, 0.8 mm, 0.9 mm, 1.0 mm, 1.1 mm, 1.2 mm, 1.3 mm, 1.4 mm, 1.5 mm, 1.6 mm, 1.7 mm, 1.8 mm, 1.9 mm, or 2.0 mm.

17~~18~~. The electron multiplier of any one of claims 1~~2~~ to 16~~17~~ comprising at least about 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 or 20 baffles.

18~~19~~. The electron multiplier of any one of claims 7~~9~~ to 16~~18~~, wherein at least one of the dynodes is configured or positioned to function as baffle.

19~~20~~. The electron multiplier of any one of claims 1~~2~~ to 18~~19~~, wherein at least one of the one or more baffles each extend for a distance of about 0.1 mm, 0.2 mm, 0.3 mm, 0.4 m, 0.5 mm, 0.6 mm, 0.7 mm, 0.8 mm, 0.9 mm, 1.0 mm, 1.1 mm, 1.2 mm, 1.3 mm, 1.4 mm, 1.5 mm, 1.6 mm, 1.7 mm, 1.8 mm, 1.9 mm, or 2.0 mm.

20~~21~~. An ion ~~particle~~ detector comprising the electron multiplier of any one of claims 1 to 19~~20~~, and a collector configured to collect secondary electrons output by the electron multiplier.

21. An electron multiplier for use in an ion detector, the electron multiplier comprising a series of discrete electron emissive surfaces configured to provide an electron amplification chain, the electron multiplier being configured so as to inhibit or prevent a contaminant from entering into, or passing partially through, or passing completely through the electron multiplier, wherein the electron multiplier further comprises one or more baffles configured so as to prevent or inhibit a contaminant from entering into, or passing partially through, or passing completely through the electron multiplier, and wherein each of the series of discrete electron emissive surfaces is a dynode, and one of the one or more baffles extends from the dynode, and wherein the dynode has a peripheral region and the one or more baffles extend from the peripheral region.

22. An electron multiplier for use in an ion detector, the electron multiplier comprising a series of discrete electron emissive surfaces configured to provide an electron amplification chain, the electron multiplier being configured so as to inhibit or prevent a contaminant from entering into, or passing partially through, or passing completely through the electron multiplier, wherein the electron multiplier further comprises one or more baffles configured so as to prevent or inhibit a contaminant from entering into, or passing partially through, or passing completely through the electron multiplier, and wherein each of the series of discrete electron emissive surfaces is a dynode, and one of the one or more baffles extends from the dynode, and wherein each of the series of discrete electron emissive surfaces is a dynode, the series of dynodes being arranged in an interleaving manner.