

CLAIMS

1. An introducer for introducing an electrosurgical instrument into a body of a patient, the introducer comprising:
a tubular member defining a lumen through which the electrosurgical instrument is insertable; and
a cooling assembly configured to remove heat from the tubular member.
2. An introducer according to claim 1, wherein the cooling assembly includes a heat sink that is thermally coupled to the tubular member.
3. An introducer according to claim 2, wherein the heat sink has a greater heat capacity than the tubular member.
4. An introducer according to claim 2 or 3, wherein the heat sink is disposed at or near a proximal end of the tubular member.
5. An introducer according to one of claims 2 to 4, wherein the heat sink is disposed in a handle of the tubular member.
6. An introducer according to one of claims 2 to 5, wherein the heat sink is thermally coupled to the tubular member via a heat pipe.
7. An introducer according to one of claims 2 to 6, wherein the cooling assembly is configured to actively cool the heat sink.
8. An introducer according to claim 7, wherein the cooling assembly includes a fan configured to actively cool the heat sink.
9. An introducer according to claim 7 or 8, wherein the cooling assembly is configured to actively cool the heat sink with a coolant fluid.

10. An introducer according to one of claims 7 to 9,
wherein the cooling assembly includes a heat exchanger
configured to actively cool the heat sink.

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11. An introducer according to any preceding claim,
wherein the cooling assembly includes a heat pump configured
to remove heat from the tubular member.

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12. An introducer according to any preceding claim,
wherein the tubular member includes one or more channels
defined on or in a sidewall of the tubular member, and wherein
the cooling assembly is configured to circulate a coolant
fluid through the one or more channels to remove heat from the
tubular member.

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13. An introducer according to any preceding claim,
wherein the tubular member includes one or more contact
elements disposed within the lumen and arranged to press
against an outer surface of the electrosurgical instrument
when the electrosurgical instrument is inserted through the
lumen.

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14. An introducer according to any preceding claim,
wherein the tubular member includes a distal end formed of a
dielectric material.

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15. An introducer according to any preceding claim,
wherein the tubular member includes a pointed distal end.

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16. An introducer according to any preceding claim,
wherein the tubular member includes an outer layer formed of a
biocompatible material.

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17. An introducer according to any preceding claim,
wherein the tubular member includes an inner layer formed of a
thermally conductive material, and an outer layer formed of a
thermally insulating material.

18. An introducer according to any preceding claim,
wherein a proximal portion of the tubular member is flexible,
and a distal portion of the tubular member is rigid.

5 19. An introducer according to any preceding claim,
wherein a length of the tubular member is 30 cm or greater.

20. An electrosurgical system comprising:
an electrosurgical instrument comprising:
10 a transmission line for conveying microwave
and/or radiofrequency electromagnetic (EM) energy;
and
 a radiating tip mounted at a distal end of the
transmission line configured to receive and deliver
15 the microwave and/or radiofrequency EM energy to
biological tissue; and
 an introducer according to one of claims 1 to 19,
wherein the electrosurgical instrument is insertable through
the lumen of the tubular member.

20 21. A method of introducing an electrosurgical
instrument into a body of a patient, the method comprising:
 inserting a tubular member of an introducer into the body
of the patient;
25 inserting an electrosurgical instrument through a lumen
of the tubular member, such that a radiating tip of the
electrosurgical instrument protrudes beyond a distal end of
the tubular member; and
 removing heat from the tubular member using a cooling
30 assembly of the introducer.