substrate liquid , preferably while maintaining or improving aerosol-generating performance of the aerosol-generating system, in which the cartridge is used.

According to a first aspect of the invention there is provided a cartridge for use in an aerosol-generating system, for example an electrically operated aerosol-generating system, comprising a liquid storage portion comprising a housing for holding a liquid aerosol-forming substrate. The liquid storage portion comprises at least two parts in fluid communication with each other. The first part of the liquid storage portion comprises a heater assembly, a first capillary material, provided in contact with the heater assembly, and a second capillary material in contact with the first capillary material and spaced apart from the heater assembly by the first capillary material. The second part of the liquid storage portion comprises a container for holding aerosol-forming substrate in liquid form and preferably arranged for supplying the liquid to the second capillary material. The second part of the liquid storage portion may comprise a tank that is substantially empty and is suitable for holding aerosol-forming substrate in liquid form.

The capillary material is preferably designed such that it is capable of holding sufficient liquid substrate for several puffs. As the capillary material is located in contact with the heater, the heater is provided independent of the holding angle of the aerosol-generating liquid with sufficient aerosol-generating liquid. The remaining inner volume of the liquid storage portion comprises no capillary material but represents an empty tank for storing aerosol-generating liquid. Under normal handling conditions an aerosol-generating medium, in particular an aerosol-generating smoking device, is transported between puffs and the capillary material will regularly contact and re-absorb new aerosol-generating liquid.

Because of the reduced amount of the capillary material used, the amount of residual liquid remaining in the capillary material after usage of the cartridge is smaller than in conventional cartridges in which the whole liquid storage portion is filled with capillary material. Moreover, performance tests have shown that the TPM (total particulate matter) yield of aerosol-generating smoking devices equipped with cartridges of the present invention is in many examples at least comparable to the performance of aerosol-generating smoking devices equipped with currently available cartridges.

Preferably the liquid capacity of the capillary material is such that it can hold enough liquid for 30 to 40 puffs or more. A 3 second puff may include about 1mg to 4mg of liquid, for example 3mg to 4mg of liquid. Preferably the capacity of the capillary material is between about 30mg to about 160mg, preferably 90 mg to about 160 mg or more, preferably 100 mg to 150 mg, for example 130 mg. Where there are two layers making up the capillary material, the capacity of the first and second layers may be such that about 10 to 20 % by weight of the liquid capacity is in the first layer. For example, where the capacity of the

system, with a liquid storage portion comprising a housing for holding a liquid aerosol-forming substrate, the housing having an opening, wherein the liquid storage portion comprises at least two parts in fluid communication to each other. The first part of the liquid storage portion comprises a first capillary material, provided at the vicinity of the opening of the housing, and a second capillary material in fluid contact with the first capillary material and spaced apart from the opening by the first capillary material. The second part of the liquid storage portion comprises a container for holding aerosol-forming substrate in liquid form and supplying the liquid to the second capillary material. The second part of the liquid storage portion may be substantially empty and being suitable for holding aerosol-forming substrate in liquid form.

The cartridge preferably further comprises a fluid permeable heater assembly extending across the opening of the housing.

In the embodiments of the present invention wherein the first part of the liquid storage portion occupies below 50 %, preferably between 10 % and 30 %, more preferably between 15 % and 25 % and most preferably about 20 % of the volume of the liquid storage portion.

The capillary material extends across the complete cross-section of the first part of the liquid storage portion, such that it is not possible for the liquid aerosol-generating substrate to flow directly to the heater assembly or the opening of the cartridge.

According to a further aspect of the invention there is provided an aerosol-generating system comprising a cartridge according to the present invention.

The system may further comprise electric circuitry connected to the heater assembly and to an electrical power source, the electric circuitry configured to monitor the electrical resistance of the heater assembly or of one or more filaments of the heater assembly, and to control the supply of power to the heater assembly dependent on the electrical resistance of the heater assembly or the one or more filaments.

The electric circuitry may comprise a microprocessor, which may be a programmable microprocessor. The electric circuitry may comprise further electronic components. The electric circuitry may be configured to regulate a supply of power to the heater assembly. Power may be supplied to the heater assembly continuously following activation of the system or may be supplied intermittently, such as on a puff-by-puff basis. The power may be supplied to the heater assembly in the form of pulses of electrical current.

The system advantageously comprises a power supply, typically a battery, within the main body of the housing. As an alternative, the power supply may be another form of charge storage device such as a capacitor. The power supply may require recharging and may have a capacity that allows for the storage of enough energy for one or more smoking experiences; for example, the power supply may have sufficient capacity to allow for the continuous generation of aerosol for a period of around six minutes, corresponding to the typical time taken to smoke a conventional cigarette, or for a period that is a multiple of six minutes. In another example, the power supply may have sufficient capacity to allow for a predetermined number of puffs or discrete activations of the heater assembly.