using alternative features. Similarly, features introduced by "in an embodiment of the invention" or similar expressions are intended to be optional features, without any restriction regarding alternative embodiments of the invention, without any restrictions regarding the scope of the invention and without any restriction regarding the possibility of combining the features introduced in such way with other optional or non-optional features of the invention.

In a first aspect of the present invention, an analytical method for determining a concentration of an analyte in a bodily fluid is disclosed, the method comprising using a mobile device having a camera and a processor. The method comprises the following steps which, as an example, may be performed in the given order. It shall be noted, however, that a different order is also possible. Further, it is also possible to perform one or more of the method steps once or repeatedly. Further, it is possible to perform two or more of the method steps simultaneously or in a timely overlapping fashion. The method may comprise further method steps which are not listed. The method comprises, in a first step i), capturing at least one image of at least a part of an optical test strip having a sample of the bodily fluid applied onto a reagent test region of the test strip, wherein the capturing comprises using the camera of the mobile device. The at least one image captured comprises at least a part of the reagent test region having the sample of the bodily fluid applied thereto. The method further comprises determining, by the processor, the analyte concentration from the image captured in step i), based on a color formation reaction at the reagent test region having the sample of the bodily fluid applied thereto.

The method further comprises:

ii) receiving local temperature information at a current location of the mobile device, wherein said local temperature information is received by the mobile device from at least two of the following temperature source options:
    a) a remote weather information service;
    b) a temperature sensor of an external electronic device; and
    c) a temperature sensor of the mobile device;
    or wherein said local temperature information is received by the mobile device from at least one of the following temperature source options:
    a) a remote weather information service;

b) a temperature sensor of an external electronic device; and

c) a temperature sensor of the mobile device;

and wherein additional local temperature information is received by the mobile device from a thermochromic field provided on the test strip and/or on a color reference card.

In step ii), the external electronic device is selected from one or more of wearables, such as fitness trackers, smart watches, smart glasses, smart clothing; smart-home components, such

In another aspect of the present invention, a mobile device having at least one camera and at least one processor is provided, the mobile device being configured for determining a concentration of an analyte in a bodily fluid by capturing at least one image of at least a part of an optical test strip having a reagent test region by using the camera, and by determining the at least one analyte concentration value from a color formation reaction at the reagent test region of the optical test strip,

wherein the mobile device further is configured for receiving local temperature information at a current location of the mobile device,

said local temperature information being received from at least two of the following temperature source options:

a) a remote weather information service;

b) a temperature sensor of an external electronic device; and

c) a temperature sensor of the mobile device;

or wherein said local temperature information is received by the mobile device from at least one of the following temperature source options:

a) a remote weather information service;

b) a temperature sensor of an external electronic device; and

c) a temperature sensor of the mobile device;

and wherein additional local temperature information is received by the mobile device from a thermochromic field provided on the test strip and/or on a color reference card;

wherein the external electronic device is selected from one or more of wearables, such as fitness trackers, smart watches, smart glasses, smart clothing; smart-home components, such as electronic heating systems, smart temperature measurement units, home weather stations; and body-worn sensors, such as non-invasive analyte measurement sensors; and

wherein the mobile device further is configured for performing at least steps iii) and iv) of the analytical method described herein above.

In another aspect of the present invention, a kit is provided, comprising a mobile device as described herein above, and an optical test strip.

In another aspect of the present invention, a computer program is provided, comprising instructions which, when the program is executed by the mobile device as described herein above, cause the mobile device to carry out at least steps iii) and iv) of the analytical method described herein above.

Claims

1. An analytical method for determining a concentration of an analyte in a bodily fluid by using a mobile device having a camera and a processor, comprising:

   i) capturing at least one image of at least a part of an optical test strip by the camera, the optical test strip having a sample of the bodily fluid applied onto a reagent test region of the test strip, wherein the image comprises at least a part of the reagent test region having the sample of the bodily fluid applied thereto; and

   ii) receiving local temperature information at a current location of the mobile device,

   - wherein said local temperature information is received by the mobile device from at least two of the following temperature source options:
     a) a remote weather information service;
     b) a temperature sensor of an external electronic device; and
     c) a temperature sensor of the mobile device;
   - or wherein said local temperature information is received by the mobile device from at least one of the following temperature source options:
     a) a remote weather information service;
     b) a temperature sensor of an external electronic device; and
     c) a temperature sensor of the mobile device;

     and wherein additional local temperature information is received by the mobile device from a thermochromic field provided on the test strip and/or on a color reference card;

   wherein the external electronic device is selected from one or more of wearables, such as fitness trackers, smart watches, smart glasses, smart clothing; smart-home components, such as electronic heating systems, smart temperature measurement units, home weather stations; and body-worn sensors, such as non-invasive analyte measurement sensors; and

   iii) determining, by the processor, a correction temperature and/or a correction temperature function, using the local temperature information from step ii); and

iv) determining, by the processor, the analyte concentration from the image captured in step i), based on a color formation reaction at the reagent test region having the sample of the bodily fluid applied thereto, taking into account at least one of the correction temperature from step iii), and the correction temperature function from step iii).

2. The method according to claim 1, wherein step ii) comprises determining, at least approximately, the current location of the mobile device by a localization means of the mobile device; particularly, wherein said determining is carried out automatically by the localization means.

3. The method according to claim 2, wherein said determining of the current location of the mobile device comprises using, by the localization means, data from at least one of satellites, Assisted GPS, the Global System for Mobile Communications (GSM), multilateration, triangulation, subscriber identity modules (SIM cards), software-based dedicated trackers, Wi-Fi positioning systems, Wi-Fi networks, navigation tools and navigation systems.

4. The method according to any one of claims 2 and 3, wherein said determining of the current location of the mobile device comprises selecting, by the localization means, whether the current location of the mobile device is indoors or outdoors; particularly, wherein said selecting is carried out automatically by the localization means.

5. The method according to any one of the preceding claims, wherein step ii) comprises checking, by the mobile device, which of the temperature source options a), b) and c) are available for receiving the local temperature information; particularly, checking at least one of:

aa) checking if a remote server is available for wirelessly connecting to the mobile device;

bb) checking if an external electronic device is available for wirelessly connecting to the mobile device;

cc) checking if, in the mobile device, an ambient temperature sensor and/or a temperature sensor for detecting overheating, particularly local overheating, is available; more particularly, wherein step ii) comprises establishing a wireless connection of the mobile device to the remote server and/or to the external electronic device, depending on availability thereof; and even more particularly, wherein step ii) further comprises receiving the local temperature information from all of the temperature source options a), b) and/or c) which are available.

6. The method according to any one of the preceding claims, wherein step ii) comprises receiving, by the mobile device, the local temperature information at least from a remote weather information service, and also from at least one of the temperature source options b) and c).

7. The method according to any one of the preceding claims, wherein step iii) comprises verifying or adjusting, by the processor, the local temperature information received from at least one of the temperature source options a), b) and c); particularly, wherein said verifying or adjusting takes the local temperature information received from at least one of the other two temperature source options into account.

8. The method according to any one of the preceding claims, wherein step iii) further comprises using the local temperature information from step ii) for selecting one of a plurality of temperature ranges, which temperature ranges may be pre-defined and optionally comprise from 2 to 5 temperature ranges.

9. The method according to claim 8, wherein each of the plurality of temperature ranges is associated with its own specific correction temperature or correction temperature function, wherein said specific correction temperature or correction temperature function may be selected independently from one another for each temperature range.

10. The method according to any one of the preceding claims, wherein step ii) further comprises receiving local humidity information at a current location of the mobile device, and

optionally, determining, by the processor, a correction humidity and/or a correction humidity function, using the local humidity information; and

determining, by the processor, the analyte concentration from the image captured in step i) by taking into account at least one of the local humidity information, the correction humidity, and the correction humidity function.

11. A mobile device having at least one camera and at least one processor, the mobile device being configured for determining a concentration of an analyte in a bodily fluid by capturing at least one image of at least a part of an optical test strip having a reagent test region by using the camera, and by determining the at least one analyte concentration value from a color formation reaction at the reagent test region of the optical test strip, wherein the mobile device further is configured for receiving local temperature information at a current location of the mobile device,

- said local temperature information being received from at least two of the following temperature source options:
  a) a remote weather information service;
  b) a temperature sensor of an external electronic device; and
  c) a temperature sensor of the mobile device;
- or wherein said local temperature information is received by the mobile device from at least one of the following temperature source options:
  a) a remote weather information service;
  b) a temperature sensor of an external electronic device; and
  c) a temperature sensor of the mobile device;

  and wherein additional local temperature information is received by the mobile device from a thermochromic field provided on the test strip and/or on a color reference card;

wherein the external electronic device is selected from one or more of wearables, such as fitness trackers, smart watches, smart glasses, smart clothing; smart-home components, such as electronic heating systems, smart temperature measurement units, home

weather stations; and body-worn sensors, such as non-invasive analyte measurement sensors; and

wherein the mobile device further is configured for performing at least steps iii) and iv) of the analytical method according to any one of claims 1 to 10.

12. A kit, comprising a mobile device according to claim 11, and an optical test strip.

13. A computer program comprising instructions which, when the program is executed by the mobile device according to claim 11, cause the mobile device to carry out at least steps iii) and iv) of the analytical method of any one of claims 1 to 10.

14. A computer-readable storage medium comprising instructions which, when executed by the mobile device according to claim 11, cause the mobile device to carry out at least steps iii) and iv) of the analytical method of any one of claims 1 to 10.