

CLAIMS

What is claimed is:

1. A login method, wherein the method comprises:

displaying dynamic information for login to a user, wherein the dynamic
5 information comprises one or more random combinations of color changes, blink
length changes, and energy changes;

receiving an EEG signal that is generated by the user based on the displayed
dynamic information and that is monitored by a monitoring device;

matching the monitored EEG signal with an EEG signal that corresponds to the
10 dynamic information in a login authentication library, wherein EEG signals generated
by users based on various dynamic information are stored in the login authentication
library; and

logging in when the monitored EEG signal successfully matches the EEG signal
that corresponds to the dynamic information in the login authentication library.

15 2. The method according to claim 1, wherein the EEG signal in the login
authentication library is obtained through machine learning training.

3. The method according to claim 1, wherein the receiving an EEG signal that is
generated by the user based on the displayed dynamic information and that is
monitored by a monitoring device comprises:

20 receiving the EEG signal that is generated by the user based on the displayed
dynamic information and that is monitored by the monitoring device and a unique
identification signal of an EEG of the user, wherein the unique identification signal of
the EEG is a user-specific unique EEG feature code; and

the matching the monitored EEG signal with an EEG signal that corresponds to
25 the dynamic information in a login authentication library comprises:

matching the unique identification signal of the monitored EEG in an identity
authentication library, wherein unique identification signals of EEG that corresponds
to different users are stored in the identity authentication library;

obtaining an EEG signal that corresponds to a target user with regard to the
30 dynamic information from the login authentication library when the target user is
matched; and

matching the monitored EEG signal with the EEG signal obtained from the login

authentication library.

4. The method according to claim 1, wherein before the displaying dynamic information for login to a user, the method further comprises:

5 monitoring a current environment to determine whether the current environment affects normal generation of the EEG; and

the displaying dynamic information for login to a user comprises:

displaying the dynamic information for login to the user when the current environment does not affect the normal generation of the EEG.

10 5. The method according to claim 4, wherein the monitoring a current environment to determine whether the current environment affects normal generation of the EEG comprises:

monitoring noise decibels of the current environment;

monitoring whether the noise decibels in the current environment reach a threshold; and

15 determining that the current environment does not affect the normal generation of the EEG when the noise decibels of the current environment do not reach the threshold.

6. The method according to claim 1, wherein the displaying dynamic information for login to a user comprises:

20 displaying the dynamic information for login to the user when a notification that the current environment does not affect the normal generation of the EEG is received from the monitoring device.

7. The method according to claim 1, wherein the method further comprises:

25 collecting biometric information of the user when the monitored EEG signal fails to match the EEG signal that corresponds to the dynamic information in the login authentication library; and

logging in based on the biometric information of the user.

8. The method according to claim 7, wherein before the collecting biometric information of the user, the method further comprises:

30 counting the number of EEG matching failures; and

the collecting biometric information of the user comprises:

collecting the biometric information of the user when the number of EEG matching failures reaches a threshold.

9. The method according to claim 7 or 8, wherein the biometric information

comprises:

at least one of a fingerprint, a palm print, an iris, an eye print, a face, or a sound wave.

10. A login apparatus, used in a login device, wherein the apparatus comprises:

5 a displaying unit, configured to display dynamic information for login to a user, wherein the dynamic information comprises one or more random combinations of color changes, blink length changes, and energy changes;

a receiving unit, configured to receive an EEG signal that is generated by the user based on the displayed dynamic information and that is monitored by a
10 monitoring device;

a matching unit, configured to match the monitored EEG signal with an EEG signal that corresponds to the dynamic information in a login authentication library, wherein EEG signals generated by users based on various dynamic information are stored in the login authentication library; and

15 a login unit, configured to log in when the monitored EEG signal successfully matches the EEG signal that corresponds to the dynamic information in the login authentication library.

11. The apparatus according to claim 10, wherein the EEG signal in the login authentication library is obtained through machine learning training.

20 12. The apparatus according to claim 10, wherein the receiving unit comprises:

receiving the EEG signal that is generated by the user based on the displayed dynamic information and that is monitored by the monitoring device and a unique identification signal of an EEG of the user, wherein the unique identification signal of the EEG is a user-specific unique EEG feature code; and

25 the matching unit comprises:

a first matching subunit, configured to match the unique identification signal of the monitored EEG in an identity authentication library, wherein unique identification signals of EEG that corresponds to different users are stored in the identity authentication library;

30 an obtaining subunit, configured to obtain an EEG signal that corresponds to a target user with regard to the dynamic information from the login authentication library when the target user is matched; and

a second matching subunit, configured to match the monitored EEG signal with the EEG signal obtained from the login authentication library.

13. The apparatus according to claim 10, wherein before the displaying unit, the apparatus further comprises:

an environment determining subunit, configured to monitor a current environment to determine whether the current environment affects normal generation

5 of the EEG; and

the displaying unit comprises:

displaying the dynamic information for login to the user when the current environment does not affect the normal generation of the EEG.

14. The apparatus according to claim 13, wherein the environment determining
10 subunit comprises:

a noise monitoring subunit, configured to monitor noise decibels of the current environment;

a noise determining subunit, configured to determine whether the noise decibels of the current environment reach a threshold; and

15 an environment determining subunit, configured to determine that the current environment does not affect the normal generation of the EEG when the noise decibels of the current environment do not reach the threshold.

15. The apparatus according to claim 10, wherein the displaying unit comprises:

20 displaying the dynamic information for login to the user when a notification that the current environment does not affect the normal generation of the EEG is received from the monitoring device.

16. The apparatus according to claim 10, wherein the apparatus further comprises:

25 a collecting unit, configured to collect biometric information of the user when the monitored EEG signal fails to match the EEG signal that corresponds to the dynamic information in the login authentication library; and

a biometric login unit, configured to log in based on the biometric information of the user.

17. The apparatus according to claim 16, wherein the collecting unit comprises:

30 a counting subunit, configured to count the number of EEG matching failures when the monitored EEG signal fails to match the EEG signal that corresponds to the dynamic information in the login authentication library; and

a collecting subunit, configured to collect the biometric information of the user when the number of EEG matching failures reaches a threshold.

18. The apparatus according to claim 16 or 17, wherein the biometric information comprises:

at least one of a fingerprint, a palm print, an iris, an eye print, a face, or a sound wave.

5 19. An electronic device, comprising:

a processor; and

a memory, configured to store instructions that can be executed by the processor; wherein the processor is configured to

10 display dynamic information for login to a user, wherein the dynamic information comprises one or more random combinations of color changes, blink length changes, and energy changes;

receive an EEG signal that is generated by the user based on the displayed dynamic information and that is monitored by a monitoring device;

15 match the monitored EEG signal with an EEG signal that corresponds to the dynamic information in a login authentication library, wherein EEG signals generated by users based on various dynamic information are stored in the login authentication library; and

logging in when the monitored EEG signal successfully matches the EEG signal that corresponds to the dynamic information in the login authentication library.