23. Electrochemical device, comprising at least one dense layer according to claim 21 or 22.

24. Electrochemical device according to claim 23, characterised in that it consists of a lithium ion battery.

25. Lithium ion battery according to claim 24, characterised in that it comprises an anode and/or a cathode which are dense layers according to one of claims 21 or 22.

26. Lithium ion battery according to claim 24 or 25, characterised in that it comprises an electrolyte layer which is a dense layer according to one of claims 21 or 22.

27. Lithium ion battery according to claim 25, characterised in that it comprises a liquid electrolyte infiltrated in a porous separator separating said anode and said cathode.