time, and for generating a feedback control signal proportional to the difference between said computed instantaneous temperature scanning rate and a predetermined temperature scanning rate;

programmable power supply means coupled to said calculating means and said plurality of heating elements for applying power to said heating elements in accordance with said feedback control signal generated by said processor control means.

13. A differential scanning calorimeter according to claim **12** wherein said temperature scanning means further comprises:

a source of cold fluid;

cooling coils connected to said source of cold fluid, said cooling coils surrounding said isothermal shield and said adiabatic shield and reducing the temperature of said heat sink upon application of cold fluid through said cooling coils;

whereby a negative temperature scan of said heat sink from high to low temperatures is produced by said cold fluid in said cooling coils, said processor control means, said programmable power supply means and said heating elements providing fine control of said negative temperature scan.

14. In a differential scanning calorimeter for measuring the absolute heat capacity of a sample substance, said calorimeter having a pair of measuring cells containing a reference and a sample substance, said cells disposed in a thermally conductive heat sink, the improvement of each of said measuring cells comprising:

ampoule means for containing a test substance;

cell frame means, housing said ampoule means, for supporting said ampoule means, said cell frame means thermally conductive and at least partially honeycombed such that the heat capacity of said cell frame means is reduced; and

temperature differential sensing means in contact with said heat sink and said cell frame means for measuring the temperature differential between said heat sink and said cell frame means.

15. In a calorimeter according to claim **14**, the improvement of said ampoule means further comprising:

pressurizable ampoule means.

16. In a calorimeter according to claim **15** the improvement of said pressurizable ampoule means comprising:

a cylindrical ampoule container having a threaded neck orifice at one end of said container, said neck orifice having a flat top surface, and a flat shoulder surface at the base of said neck orifice;

disposable sealing means seated within said shoulder of said neck for providing said ampoule means with an air-tight seal;

a threaded cap which matingly engages said threaded neck orifice, said cap having a flat bottom surface which sealingly engages said disposable sealing means when said cap is screw tightened on said threaded neck orifice;

capilliary tubing means embedded in said threaded cap for applying a pressurized inert gas to said ampoule means; and

evaporation sealing means within said threaded cap for producing an air-tight evaporation seal within said ampoule means after pressurization of said ampoule through said capilliary tubing means.

17. In a calorimeter according to claim **16** the improvement of said evaporation sealing means comprising:

an elastomeric O-ring seated against the top interior surface of said threaded cap, said O-ring having a central opening in communication with said capilliary tubing means;

an evaporation seal comprising a circular sealing plate having top and bottom surfaces; top and bottom guide shafts respectively appending from said top and bottom surfaces of said sealing plate, said guide shafts maintaining said sealing plate directly beneath said O-ring; and

spring tensioning means seated on said top flat surface of said threaded neck orifice between said sealing plate and said top flat surface;

whereby after pressurization of said ampoule means and tightening of said threaded cap on said threaded neck orifice, said spring tensioning means applies a force to said sealing plate, forcing said plate against said O-ring and providing an air-tight seal between said ampoule container and said capilliary tubing means.

18. In a calorimeter according to claim **15** the improvement of said pressurizable ampoule means comprising:

a cylindrical ampoule container having a first threaded neck orifice at one end of said container, said neck orifice having a flat top surface;

an ampoule cap comprising threaded upper and lower openings, said lower threaded opening threadingly connected to said first threaded neck orifice; a partition separating said upper and lower openings, said partition having a cylindrical recess drilled in the bottom surface of said partition, said recess in communication with said lower threaded openings; an access hole drilled through said partition connecting said upper threaded opening to said cylindrical recess and said lower threaded opening; and first sealing means seated in said cylindrical recess;

removeable pressurization means, threadingly connected to said ampoule cap, for pressurizing said ampoule means; and

removeable pressurization sealing means, surrounding the threaded connection between said lower threaded opening of said ampoule cap and said ampoule container, for sealing said threaded connection during the pressurization of said ampoule means;

wherein said ampoule means is pressurized by said pressurization means whereupon said lower threaded opening of said ampoule cap is threadingly tightened on said first threaded neck orifice of said ampoule container, said top surface of said threaded neck orifice compressing said sealing means seated in said cylindrical recess against said access opening, thereby sealing said pressurized ampoule means, said pressurization means and said pressurization sealing means thereafter disconnected from said ampoule cap and said ampoule container.

19. In a calorimeter according to claim **18** the improvement of said removeable pressurization means comprising:

a pressurization cap having a second threaded neck orifice which matingly engages said upper threaded opening of said ampoule cap, said pressurization cap further having a second cylindrical recess surrounding said second threaded neck orifice;