7. The apparatus of claim 1 wherein the mold component, and the at least one temperature-controllable array and the individually temperature-controllable elements thereof, are configured to withstand molding operations involving pressures, as measured in the mold cavity, of 20 ksi or greater.

8. The apparatus of claim 1 wherein a high-thermal-conductivity main body of an element of the temperature-controllable array comprises a thermal conductivity of at least about 100 W/m-°C, and wherein at each point of closest approach of the main body of the element to a main body of a neighboring element, the main body of the element is laterally separated from the main body of each neighboring element, by at least one spacing layer comprising one or more materials with a thermal conductivity of less than 25 W/m-°C.

9. The apparatus of claim 8 wherein the at least one spacing layer comprises an air gap in at least a portion of a space between the element and a neighboring element.

10. The apparatus of claim 8 wherein the at least one spacing layer comprises a spacer body comprising a solid material with a thermal conductivity of less than 25 W/m-°C in at least a portion of a space between the element and a neighboring element.

11. The apparatus of claim 1 wherein the skin in the areas that collectively provide the thermally-controllable array is provided as part of the mold component and comprises a rear surface against which temperature-controllable array is intimately contacted.

~~12. The apparatus of claim 1 wherein the skin in the areas that collectively provide the thermally-controllable array is provided as part of the temperature-controllable array and is attached thereto prior to incorporation of the temperature-controllable array into the mold component.~~

~~13. The apparatus of claim 1 wherein the skin in the areas that collectively provide the thermally-controllable array is provided as part of the temperature-controllable array and is collectively provided by integral skins of the elements of the temperature-controllable array.~~

~~14~~12. A process of injection molding, comprising:

providing a mold cavity comprising a molding surface comprising at least one thermally controllable array comprising a plurality of areas, each of which areas is thermally coupled to a temperature-controllable element of a temperature-controllable array;

injecting a flowable molding resin into the mold cavity;

and, altering the temperature of the injected resin within the cavity to cause the resin to solidify the resin into a molded part,

wherein at least at some time during the process, a first heat-transfer mechanism and a second heat-transfer mechanism that is different from the first heat-transfer mechanism, are generally simultaneously applied to at least one of the temperature-controllable elements of the temperature-controllable array.

~~15~~13. The process of claim ~~14~~12 wherein simultaneous application of the first and second heat-transfer mechanisms is performed during at least a portion of the altering of the temperature of the injected resin within the cavity.

~~16. The process of claim 14 wherein at least one of the temperature-controllable elements of the temperature-controllable array is laterally thermally isolated from the other elements of the temperature-controllable array.~~

~~17. The method of claim 14 wherein the first heat-transfer mechanism comprises dynamic heating or cooling of the temperature-controllable element of the temperature-controllable array, that is achieved by using at least one moving heat-transfer fluid to dynamically transfer thermal energy to or from a dynamic heat-transfer structure of the temperature-controllable element of the temperature-controllable array, and wherein the second heat-transfer mechanism comprises electrical heating or cooling of the temperature-controllable element of the temperature-controllable array.~~

~~18. The method of claim 17 wherein the first heat-transfer mechanism comprises dynamic cooling of the temperature-controllable element, and wherein the second heat-transfer mechanism comprises electrical heating of the temperature-controllable element.~~

~~19~~14. The method of claim ~~14~~12 wherein the injection molding process comprises injection of a molten resin into the mold cavity and wherein the altering the temperature of the injected resin within the cavity to cause the resin to solidify the resin into a molded part comprises cooling the molten resin; and wherein, at some point during the cooling of the molten resin:

some areas of the thermally-controllable array are cooled at a first cooling rate by using the first heat-transfer mechanism alone; and, some other areas of the thermally-controllable array are cooled at a second cooling rate that is lower than the first cooling rate, by simultaneously using the first heat-transfer mechanism to remove thermal energy from each of the other areas and using the second, heat-transfer mechanism to add thermal energy into each of the other areas.

~~20~~15. The method of claim ~~14~~12 wherein the injection molding process comprises injection of a curable resin into the mold cavity and wherein the altering the temperature of the injected resin within the cavity to cause the resin to solidify the resin into a molded part comprises heating the curable resin to promote curing of the resin; and wherein, at some point during the heating of the molten resin:

some of the areas of the thermally-controllable array are heated at a first heating rate by using the second heat-transfer mechanism alone; and, some other areas of the thermally-controllable array are heated at a second heating rate that is lower than the first heating rate, by simultaneously using the second heat-transfer mechanism to add thermal energy into each of the other areas and using the first heat-transfer mechanism to remove thermal energy from each of the other areas.