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(54) Title: THERMAL DEPOSITION SURFACE TREATMENT METHOD, SYSTEM AND PRODUCT

(57) Abstract: A process for treating a workpiece, said process comprising the steps of: (c) altering the temperature of a workpiece surface wherein at least one condition selected from the group of: thermal treatment rate, relative motion between the surface and said thermal treatment rate, coolant flow rate onto said surface, heating flow rate onto said surface and the relative speed between the heating means or the cooling means and the surface is controllable; (d) simultaneously measuring temperatures at a plurality of locations over the surface of the workpiece; (c) determining an average temperature of the temperatures measured in step (b); (d) comparing the average temperature to a preselected minimum temperature and a preselected maximum temperature for the workpiece; and (e) automatically adjusting at least one of the controllable conditions if said average temperature is not between the preselected minimum temperature and the preselected maximum temperature for the workpiece. A system for performing a thermal treatment process and the resulting product are also provided. Standard deviations of all temperature readings and controlling the relative motion speed between the thermal coating deposition head and the workpiece provide another improvement for obtaining temperature uniformity over the workpiece surface.



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