問１）

1. An alternating current welding device comprising:

a welding controlling section;

a storage section;

an alternating current frequency setting section that sets an alternating current frequency;

a reverse polarity period setting section that sets a reverse polarity period;

a calculating section that calculates a positive polarity period and the reverse polarity period and outputs to the welding controlling section; and

a selecting section that selects one among a plurality of outputs of the storage section and outputs the selected one to the calculating section, wherein

the welding controlling section passes a positive polarity base current that is lower than a peak current during the positive polarity period before a polarity inversion happens when the positive polarity period is over, and passes a reverse polarity base current that is lower than the peak current during the reverse polarity period before a polarity inversion happens when the reverse polarity period is over,

the storage section

(a) stores therein a plurality of types of combinations of a positive polarity base ratio that is a ratio of a period for passing the positive polarity base current during the positive polarity period, and a reverse polarity base ratio that is a ratio of a period for passing the reverse polarity base current during the reverse polarity period, and

(b) stores therein a plurality of types of combinations of a positive polarity peak period that is a period for passing the peak current during the positive polarity period, a positive polarity base period that is a period for passing the positive polarity base current, a reverse polarity peak period that is a period for passing the peak current in the reverse polarity period, and a reverse polarity base period that is a period for passing the reverse polarity base current, and

the selecting section selects one combination among the plurality of combinations stored in the storage section based on an inductance on a welding load side.

問２）

In a conventional monitoring system, for example, when a sensor is installed at a gate of a parking lot, a car is detected at the gate, a mobile robot is caused to move to the gate where the sensor has been installed, an image obtained during the movement is processed, a body color of the car is determined, and information about the color is transmitted to a center. In this case, it is desirable that the monitoring system acquires an image that contains information that is useful for identifying the car.

However, the way a car is parked can vary depending on the character of the thief, a status of the parking lot, and the like, and cannot be predicted in advance. Therefore, it may be difficult for the mobile robot to acquire an image of a car that allows determination of the body color of the car.

For example, when a visible-light color camera is used to acquire an image of a car and determine a body color of the car, the colors may be different because of the sunlight in an image obtained during a day time and an image obtained in the evening, and even if the car is white, it may be determined to be orange from an image thereof acquired in the evening. Besides, even during the night, depending on the lights installed in the parking lot and/or the lights from the electric signboards installed on the outer walls of the neighborhood commercial buildings, there is a drawback that the colors may appear different than when seen with human eyes.

問３）

When supercooling cancellation is detected, a food temperature Th_2 just after the supercooling cancellation is equivalent to a freezing point of the food. Based on this temperature, a target temperature Tc_set in a chilled room lower vessel is set to a temperature at which ice crystals will melt to an extent where the cells will not be damaged, for example, to Th_2+2 [℃] (S9). Note that an inside set temperature at which ice crystals will melt to an extent where the cells will not be damaged is referred to as an ice-crystal melting inside temperature.

Subsequently, when the melting of the ice crystals generated in the food is finished and the food temperature begins to rise, for example, until the food temperature Th rises to a temperature Th_2+1 [℃] that is lower than the ice-crystal melting inside temperature and at which the melting of the ice crystal can be determined, the target temperature Tc_set of the chilled room lower vessel is maintained at Th_2+2 [℃] (S10). To achieve this state, for example, a closed state of a damper is maintained leading to rising of the temperature in the chilled room lower vessel. When the food temperature Th after the supercooling cancellation crosses Th_2+1 [℃], the confirmation of presence/absence of the supercooling implementation and the supercooling cancellation is continued again by the control at S1 to S8.