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(57) Abstract :
A self-maintaining side-view vehicle mirror is comprising, a hydrophobic nano-coating 101 that minimizes water droplet contact by providing a contact angle greater than 150°, allowing droplets to roll off and preventing fog formation, a mirror heating module 102 comprises a thin nichrome wire film-based resistive heating coil laminated behind the mirror glass for uniform heat distribution, with a temperature sensor and humidity sensor housing to monitor ambient conditions, an electrochemical salinity sensor detects salt accumulation, a self-cleaning module 103 includes a cabinet 103a housing a flexible rubber micro-wiper 103b blade mounted on a telescopic hinged arm 103c, operated by a stepper motor and a motorized spring-controlled gate 105 for cleaning the mirror, an LED indicator 104 alerts the driver regarding completion of functions like cleaning or heating, an anti-glare electrochromic film 106, controlled by a light sensor, enhances visibility.

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