



INNOVUS

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ELECTRICAL WATER HEATER

Innovus Technology Transfer (PTY) Ltd is Stellenbosch University's wholly-owned technology transfer company. Contact Anita Nel, Innovus Chief Executive Officer, on (021) 808 3826 or send an email to ajnel@sun.ac.za for more information.



A system and method for detecting and estimating usage events for specific user.



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BRIEF DESCRIPTION

South Africa's national electricity utility is often in a position where it is not able to meet energy demands of the country. It is estimated that between 30% and 50% of residential electricity demand during peak hours are used by electric water heaters. As electric water heaters can store energy in the form of heated water, the total residential electricity demand could be reduced if water was heated at optimal times.

To manage the energy consumption of residential electric water heaters, an accurate user profile is required. Different consumers each have a different user program. Additionally, the season, a geographic region, and an income level are all examples of factors which may influence a usage profile. As a result, a generic program will not be sufficiently effective in managing residential electric water heating electricity usage.

Researchers at Stellenbosch University developed an electrical water heater monitoring system and method to detect and estimate usage events. These events may then be used to develop a usage profile for the specific user, which may be used to develop a customized heating schedule for the water heater.

TARGET MARKET (S)

- Hot water heater manufacturers
- Residential consumers
- City councils
- Electricity providers

UNIQUE CHARACTERISTICS

- The system and method is suitable to be fitted to existing or new electric water heater installations.
- No plumbing alterations are required for implementation, resulting in minimal installation complexity.

COMPETITIVE ADVANTAGE

- The absence of plumbing alterations results in a reduced cost and complexity to install the system.
- The ability to retrofit the system to existing electrical water heaters.
- The system is also suitable for use in other types of water heaters, for example gas heaters.

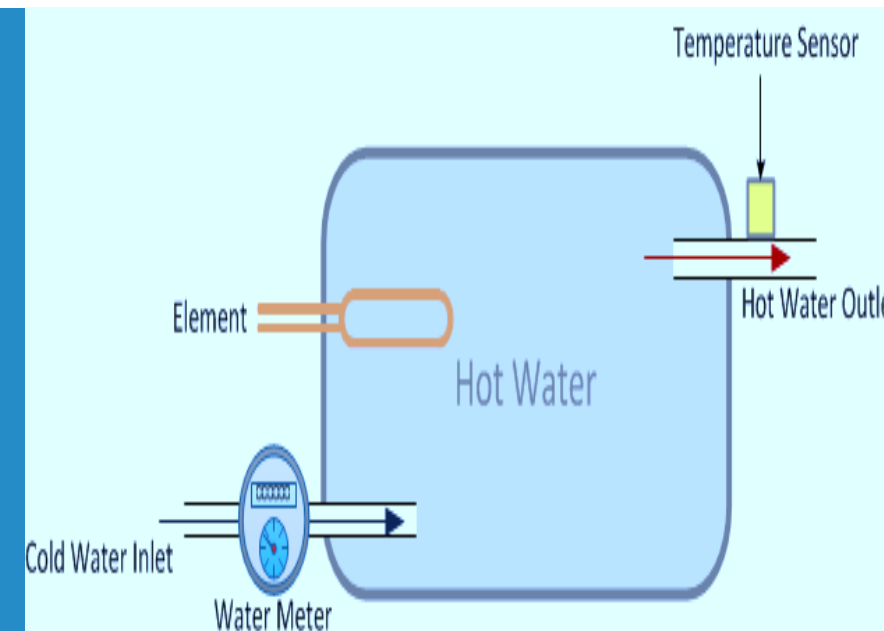
TECHNICAL DESCRIPTION

The temperature of an outlet pipe of a water heater is monitored. Based on the temperature of the outlet pipe, the system and method determines when warm water is being used in order to generate a usage profile. The usage profile is then used to determine a heating schedule for the specific water heater.

INNOVATION STATUS

A South African provision patent (no. 2015/03775) has been filed for this innovation.

A method for developing a customized heating schedule for the water heater.



PRINCIPAL RESEARCHERS

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