

# Ageing wooden power poles increase risk of fires

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Research at RMIT University has proven conclusively that wooden poles used for electricity distribution deteriorate with age and that their electrical performance worsens over time.

Fires caused by leakage current in wooden poles used for electricity distribution are a major problem for power distribution companies in Australia and globally.

Research by Dr Sachin Pathak, in the School of Electrical and Computer Engineering, investigated the behaviour of leakage current on wooden structures of various ages.

"My study proved conclusively that leakage current (electrical) performance of wooden structures deteriorates with age," he said.

"Given that 70 per cent of the 8.5 million wooden poles in service as part of the electricity distribution infrastructure in Australia are over 35 years old, these findings are significant."

Leakage current flow happens where current leaks through the insulator, due to deposits of salt spray, sand or [chemical pollution](#) on the [insulator](#) surface, under extended dry weather conditions with light rain and [high humidity](#).

Excessive activity of [leakage current](#) generates enough heat to ignite ageing wooden structures, particularly where there is contact between the

wood and [metal surfaces](#) of the power pole.

The research also suggests the need for power utilities to consider shorter inspection cycles, particularly for wooden structures near the coast, where tailor-made inspection programs would prove more effective for maintenance.

"In the wake of recent catastrophic bushfires in Victoria and Western Australia, my findings will assist the assessment of the electrical performance of wooden structures used for power distribution in greater depth," Dr Pathak, who works for Energex, a [power distribution](#) company in south-east Queensland, said.

"They will also give power utilities a far greater understanding of the role of ageing wooden structures and will assist in developing cost-effective asset maintenance and replacement programs. Ultimately, this will lead to less power pole fires."

This ongoing problem is a major worry for [power](#) distribution companies, especially during Australia's hot, dry summers.

"I hope my recommendations not only reduce the number of wooden pole fires, but also help to save lives and millions of dollars in the process," Dr Pathak said.

Provided by RMIT University

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