

Implantable Devices for Monitoring Brain Electrical Activity

Mark Cook

The Graeme Clark Institute,
The University of Melbourne

Significant advances in understanding epilepsy and the normal rhythms of the brain, particularly with regard epilepsy, have resulted from recent studies utilizing chronic ambulatory electroencephalogram (EEG) studies. Insights into seizure patterns, the ability to predict seizure activity, and the relationship of seizures to circadian rhythms are striking, and provide new opportunities to personalise therapy and develop new therapeutic paradigms. Studies so far have employed data derived from invasive EEG studies, but new developments in less invasive systems and peripheral devices will improve our ability to improve therapy and patient safety dramatically. The possibilities for application of these systems extends far beyond applications in epilepsy. These developments will be discussed, highlighting recent discoveries and future possibilities.