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LICHFIELD **GARRICK**  
*Theatre & Studio*

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**8:00 pm on Tuesday, 9th April 2019**  
**in the Studio Theatre of the Lichfield Garrick, Lichfield, WS13 6HR**

## **FASTER FUSION: FACT OR FANTASY**

**Dr Alan Costley**  
**Tokamak Energy**

Two recent developments in fusion research promise to open a faster route to fusion power. A re-examination of the ITER confinement databases has shown that for tokamaks the fusion gain depends only weakly on device size implying that smaller fusion devices may be feasible. Second, high-temperature superconductors offer the promise to realise this potential. These developments combine well in the spherical tokamak, which is a particular tokamak configuration. Tokamak Energy, a privately funded company based in the UK, is attempting to develop this alternative, faster, route to fusion. In parallel, other private companies, especially in the USA, are attempting to develop even more novel routes to fusion power. The field of fusion research is as vibrant and active now as it has ever been. In this talk, details of the Tokamak Energy programme will be presented and the opportunities and challenges of the attempts to realise faster fusion will be outlined.

Alan Costley, a PhD graduate of the Physics Department at Imperial College, has worked in fusion for more than 40 years holding senior positions at the JET project, Culham Laboratory, and on the international ITER project in Cadarache. He has published ~300 papers including about 40 invited papers at international conferences mainly in the areas of plasma diagnostics and compact fusion. He retired from ITER in 2009 and is now a consultant for government and private organisations in the UK and USA.

For further information, please see our website at [www.LSES.org.uk](http://www.LSES.org.uk)  
Students and Members Free.

Visitors £5.00. Tickets are not issued in advance, please pay at the door.

Members must sign in. Those signing in before 7:50 pm will have precedence over all visitors.

This lecture is expected to finish by 10.00 pm.