

MULTI-PHYSICS MODELLING

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ABSTRACT

Recent years have seen a surge in the development of coupled, multi-physics models capable of capturing the interaction between chemical, thermal, electrical and mechanical fields. Together with the continuous increase in computational power, this new class of electro-thermo-chemo-mechanical models enables gaining unprecedented insight into key scientific and technological problems such as the degradation of Li-Ion batteries [1], the corrosion of metals and reinforced concrete structures [2,3], the chemo-mechanical behaviour of hydrogels and active materials [4], and the early detection of neurodegenerative diseases [5]. This mini-symposium is aimed at bringing together computational solid and fluid scientists working in coupled problems. Of particular interest is the development of new algorithms and computational multi-physics techniques, but also the application of existing techniques and models to new, interested coupled problems.

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