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Finite element methods – one of the most widely used techniques for numerical approximation of solutions to PDEs – are partially classified by the Periodic Table of the Finite Elements (see <https://femtable.org/>). In recent work, we described a new family of methods called “trimmed serendipity elements” that fit within the same framework described by the table. The computational effort required to employ a trimmed serendipity element method is significantly less than what is required for comparable alternatives from the table, thereby presenting a host of potential benefits to the speed and accuracy of finite element methods in practice. All these ideas will be described in detail, followed by a discussion of the future directions and applications for these intriguing new methods. (Received September 19, 2017)