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Ileana Streinu* (istreinu@smith.edu), Computer Science Department, Smith College,
Northampton, MA 01063. *Maxwell's Problem, 150 years later: from bridges to nano-mechanics.*

Finding a combinatorial characterization for (minimally) rigid bar-and-joint frameworks in dimensions higher than 3 is an elusive, long standing open problem in rigidity theory, originating in the work of James Clerk Maxwell from the 19th century. In this survey I will summarize our current state of knowledge on Maxwell's problem, and present a range of applications, from building bridges to analyzing the stability of macro-molecules such as proteins or crystalline matter. (Received September 23, 2014)