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Modeling the chemistries of technical molecular plasmas JAMES J. MUNRO, JONATHAN TENNYSON, DANIEL B. BROWN, HEMAL N. VARAMBHIA, NATASHA DOSS, University College London, Gower Street, WC1E 6BT, UK
— Plasma chemistries, especially for molecular gases, are complicated. With a limited amount of molecular data available, it is hard to model these plasmas accurately; just a couple of feedstock gases can lead to a minimal model containing perhaps dozens of gas-phase species. The possible gas-phase and surface reactions that can occur could be in the tens of thousands; less than a hundred are typically used in chemistry models. Understanding the importance of various species and reactions to a chemical model is vital. Here we present the progress on constructing a package (Quantemol-P)[1] to simplify and automate the process of building and analyzing plasma chemistries e.g. SF_6/O_2, CF_4/O_2 and O_2/He. [1] J.J. Munro, J. Tennyson, J. Vac. Sci. Tech. A, accepted

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