**DBCC Software as Database for Collisional Cross-Sections**
DANIEL MOROZ, University of Pennsylvania, PAUL MOROZ, Tokyo Electron
U.S. Holdings, Inc. — Interactions of species, such as atoms, radicals, molecules,
electrons, and photons, in plasmas used for materials processing could be very complex, and many of them could be described in terms of collisional cross-sections.
Researchers involved in plasma simulations must select reasonable cross-sections for
collisional processes for implementing them into their simulation codes to be able
to correctly simulate plasmas. However, collisional cross-section data are difficult
to obtain, and, for some collisional processes, the cross-sections are still not known.
Data on collisional cross-sections can be obtained from numerous sources including
numerical calculations, experiments, journal articles, conference proceedings, scientific reports, various universities' websites, national labs and centers specifically
devoted to collecting data on cross-sections. The cross-sections data received from
different sources could be partial, corresponding to limited energy ranges, or could
even not be in agreement. The DBCC software package was designed to help researchers in collecting, comparing, and selecting cross-sections, some of which could
be constructed from others or chosen as defaults. This is important as different researchers may place trust in different cross-sections or in different sources. We will
discuss the details of DBCC and demonstrate how it works and why it is beneficial
to researchers working on plasma simulations.

Paul Moroz
Tokyo Electron U.S. Holdings, Inc.