Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Strong electron-phonon interaction in e-e correlated molecular systems[1] YURI DAHNOVSKY, Department of Physics & Astronomy, University of Wyoming, Laramie, WY 82071-3905 — Molecular systems (molecules) with strong electron-phonon interaction are described in terms of the Green functions. In the case of the strong e-ph interaction a general scheme that includes of the Dyson equations for the electron and phonon Green functions, is not productive. Hence, the different methodology is developed where the unitary transformation (that included both electron and phonon subsystems) is used. In this case the Dyson equation for the electron Green function is not valid any longer. Different approximations are proposed. The developed approach is extremely important for electron transfer reactions without single electron transfer assumption. It can be also used in the transport in molecular junction devices.

[1]The National Science Foundation supported this research through grant CHE-0426090.

Yuri Dahnovsky
Department of Physics & Astronomy
University of Wyoming, Laramie, WY 82071-3905

Date submitted: 01 Nov 2006 Electronic form version 1.4