# Differential Dynamic Effects on the Electron Transfer Photocycle in Mixed Metal Hemoglobin Hybrids

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Mixed-metal hemoglobin (Hb) hybrids [(ZnP), Fe(L)P][2] (P = protoporphyrin IX) exhibit long range photoinitiated electron transfer (ET) between redox centers which are held at fixed and crystallographically known distance and orientation. Even in this most "static" of protein-protein ET systems we nonetheless find strong differential influences of dynamic processes on the forward and reverse reactions of the ET photocycle.[1] The dynamics of ET in hybrid Hbs are probed by varying viscosity and temperature, as well as embedding the hybrid Hbs in a trehalose glass.

1. Hoffman BM, Celis LM, Cull DA, Patel AD, Seifert JL, Wheeler KE, Wang JY, Yao J, Kurnikov IV, Nocek JM (2005) PNAS 102(10): 3564-3569.