Recombination processes and light-induced defect creation in hydrogenated amorphous silicon (a-Si:H) are reviewed with emphasis on their models and key experiments elucidating them until now. The kinetics of light-induced defect creation in a-Si:H being expressed by a stretched exponential function has been investigated theoretically and experimentally. The results are discussed in terms of our model of light-induced defect creation in a-Si:H [1].