

Design of Linear p-Conjugated Fluorophores with High Electron Affinity

Yoshiro Yamashita

Tokyo Institute of Technology, Department of Electronic Chemistry
Interdisciplinary Graduate School of Science and Engineering 4259
Nagatsuta, Midori-ku, Yokohama 226-8502, Japan

We have prepared long size p-conjugated molecules **1** with dipyrindyl groups and benzothiadiazole units by using the Sonogashira coupling reaction. The viologen analogues were also synthesized by methylation of the pyridyl nitrogens. X-ray structure analysis of these compounds reveals the linear molecular structures with unusual columnar crystal structures. Insertion of a benzothiadiazole moiety into the acetylene-pyridine skeleton brings about a large increase in electron affinity. These molecules emit blue luminescence with high quantum yields. The wavelengths of emission have been tuned by modifying the structures. Some compounds show fluorescence in crystals.

