Arylene-ethynylene oligomers based on the proton sponge.

Autorzy

Ekaterina A. Filatova

Alexander F. Pozharskii

Anna V. Gulevskaya

Valery A. Ozeryanskii

Semyon V. Tsybulin

Aleksander Filarowski

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A new family of arylene-ethynylene oligomers consisting of two, three and four “proton sponge” fragments (1,8-bis(dimethylamino)naphthalene or DMAN) alternating with C≡C bonds were synthesized using various 2- and 4-ethynyl and 2- and 4-iodo derivatives of DMAN as synthetic building blocks in the Sonogashira coupling. X-ray structural, photophysical, chemical and electrochemical properties showed that the oligomers are promising candidates to construct materials with varied rigidity (tuned by protonation), electron conductivity (tuned by mode of linkage), and proton conductivity (equilibration of protonated and free DMAN subunits).

Słowa kluczowe

Oligo(naphthylene-ethynylene)s, Proton sponges, Proton dynamics, Synthesis design, Materials chemistry

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