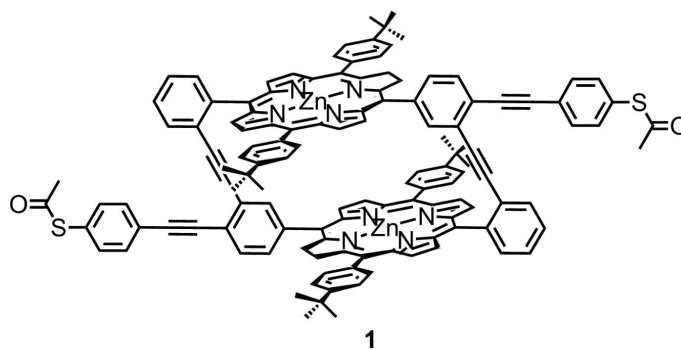
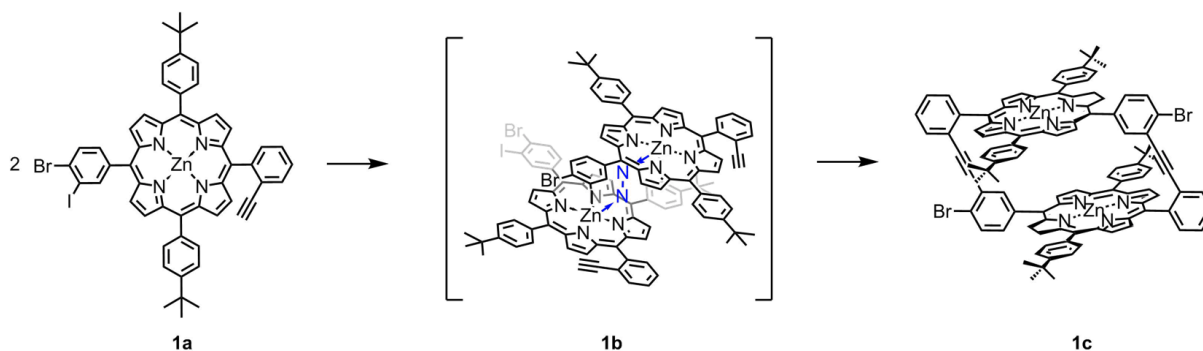


A Stretching Induced Molecular SwitchP. Zwick¹, M. Mayor^{2*}¹Universität Basel, ²University of Basel

The miniaturization of electronic devices by bottom-up approaches is of great interest. A novel molecular electronic component was reported, where conductance switching was achieved through mechanical manipulation in a mechanically controllable break junction (MCBJ)[1]. The poster shows the conceptual design of a proposed stretching induced d-orbital overlap dependent molecular switch **1**.



The switch is structurally based on a phenyl ethynylene cyclophane containing two porphyrin cores in face to face orientation. A thioacetate on each side of the macrocyclic structure allows gold electrode contacting in a MCBJ. The synthetic progress is summarized and shown on the poster. A dipyrromethane and two benzaldehyde derivatives are condensed to an assymetric porphyrin **1a**. It is proposed, that after complexation, a hydrazine templated pre-organised complex **1b** can be formed and closed to the macrocyclic structure **1c** by twofold *Sonogashira* cross coupling conditions. Metalation, *Sonogashira* cross coupling reaction and trans-protection of the thiols is proposed to afford the target compound **1**.



[1] Riccardo Frisenda, Gero D. Harzmann, Jose A. Celis Gil, Joseph M. Thijssen, Marcel Mayor, Herre S. J. van der Zant, *NanoLetters*, **2016**, 16, 4733 – 4737.