Precisely Defined Electron-Rich Oligopyrroles

Significance: The authors report the synthesis of 3,3'-linked oligopyrroles through the domino ring-enlargement of cyclopropanes. In one step, furan is converted into 2, which is subsequently transformed into diketone 3 via Weinreb-ketone synthesis. Refluxing with catalytic acid in benzene with an aniline, yielded the desired bispyrrole products 4. Unsurprisingly, the electron-rich anilines provided significantly higher yields than the electron-poor anilines.

Comment: Extended oligoacetalic diketone 5 was synthesized and subsequently converted into quarter-pyrrole 6 in 25% yield. This is the first electron-rich, precisely defined oligopyrrole reported and it is noteworthy due the inherent instability of electron-rich oligopyrrolic systems.