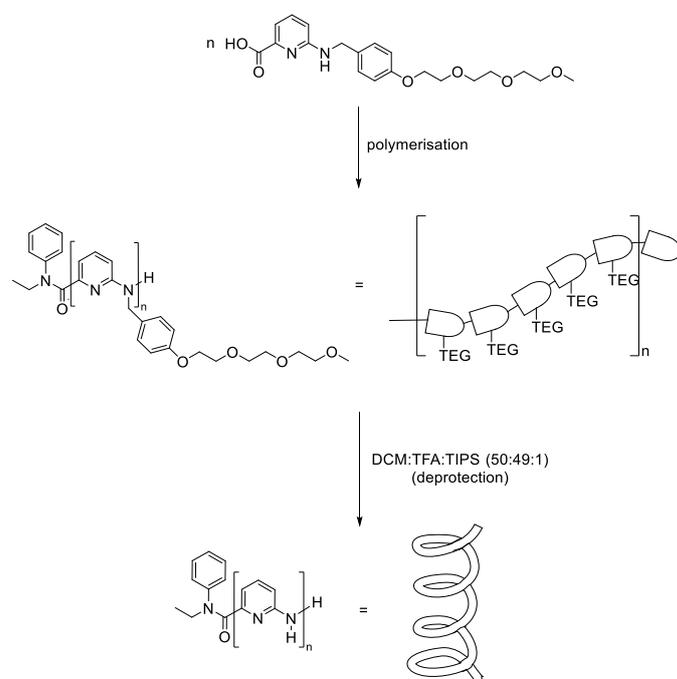


## Synthesis of pyridine-based aromatic *poly*-amides (aramides)

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This master thesis will describe the attempts at mimicking the  $\alpha$ -helix secondary structure of a polypeptide by using two synthetic aromatic aminoacids. The optimized synthesis of one of these two monomers will be detailed. All the attempts to synthesize the other monomer will also be described and a possible solution to obtain the desired molecule will be given. The obtained monomer will be polymerized using an innovative polymerization technique developed in our laboratories. It is well-known that aminoacids polymerization should proceed via a condensation mechanism. The broad PDI values obtained and the difficulty in achieving high molecular weight polymers are however two big drawbacks. With this new technique, the polymerization runs via a chain-growth mechanism and it will be thus possible to yield high molecular weight polymers with narrow polydispersities. The synthesis of a pH responsive polymer will be thus described. The linear chain monomer bearing TEG groups will be treated with TFA, which will cleave the protecting groups, allowing the linear chain to fold into a helical structure via intramolecular hydrogen bonds.



Responsible : Prof. Dr. Andreas F. M. Kilbinger