

9. Outlook

As has been outlined, the mixed attach-to strategy is successful in preparing higher generation dendronized polymers. These polymers can be deprotected to yield water and methanol soluble polymers. With these, a lot of surface modifications can be done just by using the simple amide coupling or other relevant chemistry. Some related projects undergoing in our groups are to incorporate anti-cancer drugs at the surface of the cylinders. The other one is to introduce catalyst precursor on the surface or inner parts of the cylinders to render chemical reactions occur in a specific region, and explore the possibility of simplifying the separation process in a catalytic process both for the laboratory research as well as for industry.

The other interesting target involves the detailed investigation of interactions of dendronized polymers with DNA chains. It looks promising to reduce the number of the surface charges to simplify the complexation process and to further utilize it for gene delivery.

Finally, it should be pointed out that SFM manipulations could now be developed to the point where properties of individual molecules (like bending modulus) should be determined. This should be seen in context with the bottom-up approach into the nano science.