

Benoit Loppinet présentera un second séminaire à l'UJM, le **mercredi 3 avril à 14h00**,

**Salle du conseil de l'UJM (Visio vers Lyon possible, salle à définir)**

### **Structure, persistence and hydrodynamics of high generation denpols**

Dendronized polymer (denpol) are a subclass of hyperbranched polymers. They consist of dendrimer side chain, covalently linked to a linear polymer main chain. Their unique structure is expected to lead to “sausage”-like persistent nano-object. The question of the persistence of such an object is not entirely clarified.

We use a well-defined dendronized polymers (denpols) series with a 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> generation side dendron. They were synthesized by ring-opening metathesis polymerization (ROMP) of macromonomers with large degree of polymerization denpols and narrow polydispersity,

The structure and conformation were investigated in dilute solutions, by a combination of scattering techniques. Careful analysis of GPC couple with Multiple Angle Laser Light Scattering (MALLS) allowed measure of the evolution of the gyration radius  $R_g$  with the molecular weight or the degree of polymerization. The form factors were measured by Small Angle Neutron Scattering, and analyzed by fitting with the Kholodenko semiflexible cylinder model form factor. The diffusion coefficient were also measured by Dynamic Light Scattering and were found to compare well to semi-flexible cylinders models. The evolution of the measured dimensions (cross section radius, persistence length, diffusion coefficient) with increasing denpol generation was measured, with rather high values of the aspect ratio  $lp/Rcs$  attained in the high generation denpol.