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MAIN RESEARCH TOPICS

- **Lipids and degradable polymers for biomedical applications:**
  - Archaeal lipids: synthesis, uses as nanovectors in gene/drug delivery.
  - Cell-targeting mediated by ligand (carbohydrate/folic acid/peptide) – receptor interactions.
  - Associations between lipids and degradable polymers for the development of innovative nanoparticles.
- **Green surfactants based on renewable raw materials: synthesis and physicochemical evaluations.**
  - Cationic glycine-betaine-based surfactants for applications in cosmetics and road making.
  - Green surfactants derived from marine resources.
  - Biodegradable polyol-type surfactants (carbohydrate, glycerol,…).

CURRENT CONSULTANCY WORK AND AGREEMENTS WITH COMPANIES

- Green sugar-based surfactants: Armor protéines (Rennes, France).
- Archaeosomes and archaepolyosomes as innovative delivery systems for antitumoral agents derived from marine resources: C-Ris Pharma (Saint-Malo, France), PE2M (Caen, France), Innova Proteomics (Rennes, France).
- Amphiphilic compounds from alginates : CEVA (Pleubian, France).

PROFESSIONAL QUALIFICATIONS

- Teaching coordinator of the Ecole Nationale Supérieure de Chimie de Rennes (France).
- Member of the National Committee of the Universities (section: Organic, Inorganic and Industrial Chemistry).
- Co-Director of the Platform Gis Ibisa SynNanoVect (Development and Production of Drug and Gene Synthetic NanoVectors)
- Member of the French Society of Chemistry, French Society of Biophysics
- Refereeing duties for various international journals and French granting agencies.

SOME REPRESENTATIVE RECENT PAPERS

Surfactants from Renewable Sources: Synthesis and Applications. In *Monomers, Polymers and Composites from Renewable Resources*,
Benvegnu, T.; Plusquellec, D.; Lemiègre, L.;Belgacem, M. N.; Gandini, A., Eds. Elsevier Limited: Amsterdam, **2008**; ISBN-13: 978-0-08-045316-3; ISBN-10: 0-08-045316-3.

Glycine betaine as a renewable raw material to "greener" new cationic surfactants.
Goursaud, F.; Berchel, M.; Guilbot, J.; Legros, N.; Lemiègre, L.; Marcilloux, J.; Plusquellec, D.; Benvegnu, T., *Green Chemistry* **2008,** 10, 310-320.

Archaeal Lipids: Innovative Materials for Biotechnological Applications.
Benvegnu, T.; Lemiègre, L.; Cammas-Marion, S., *European Journal of Organic Chemistry* **2008**, 4725-4744.

Folate-equipped Pegylated Archaeal Lipid Derivatives: Synthesis and Transfection Properties.
Lainé, C.; Mornet, E.; Lemiègre, L.; Montier, T.; Cammas-Marion, S.; Neveu, C.; Carmoy, N.; Lehn, P.; Benvegnu, T., *Chemistry-a European Journal* **2008,** 14, 8330-8340.

Preparation of glycine betaine surfactants for use in cosmetics
Antoine, J. P.; Marcilloux, J.,; Lefeuvre, M.; Plusquellec, D.; Benvegnu, T.; Goursaud, F.; Parant, B. *FR 2869913, WO 2005121291*, **2005**.