<table>
<thead>
<tr>
<th>Group name</th>
<th><strong>Polymer synthesis and functionalization group</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff (e-mail)</td>
<td>Dr. Atsushi Narumi, Assistant Professor</td>
</tr>
<tr>
<td></td>
<td>(<a href="mailto:narumi@yz.yamagata-u.ac.jp">narumi@yz.yamagata-u.ac.jp</a>)</td>
</tr>
<tr>
<td></td>
<td>(Please correct font of @ to use)</td>
</tr>
<tr>
<td>Group Homepage</td>
<td></td>
</tr>
<tr>
<td>Main Subjects</td>
<td>1. Functional polymer synthesis</td>
</tr>
<tr>
<td></td>
<td>2. Design and synthesis of macromolecular architectures</td>
</tr>
<tr>
<td></td>
<td>3. Polymer synthesis from natural resources</td>
</tr>
</tbody>
</table>

1. Research topics include the synthesis of functional polymers, such as glycoconjugated polymers, chiral polymers, and stimuli-responsive polymers.

2. Macromolecular architectures, such as end-functional polymers, block copolymers, and star-shaped polymers, have been prepared and characterized.

3. Polymers have been synthesized from natural resources, such as saccharides and amino acids. The synthetic methods include vinyl polymerizations and enzymatic polymerizations.

<Selected publications>

1. “A Versatile Method for Adjusting Thermoresponsivity. Synthesis and "Click" Reaction of an Azido End-Functionalized Poly(N-isopropylacrylamide)”

2. “Synthesis of Glycoconjugated Branched Macromolecular Architectures (Review)”
   A. Narumi and T. Kakuchi

3. “Enantiomer-Selective Radical Polymerization of Bis(4-vinylbenzoate)s with Chiral Atom Transfer Radical Polymerization Initiating System”
A. Narumi, H. Kaga, Y. Miura, I. Otsuka, T. Satoh, N. Kaneko, T. Kakuchi
Biomacromolecules 7, 1496-1501 (2006)

5. “End-Functionalization of Polystyrenes by Malto-oligosaccharides Generating Aggregation-Tunable Polymeric Reverse Micelle”

A. Narumi, S. Yamane, Y. Miura, H. Kaga, T. Satoh, T. Kakuchi

7. “Glycoconjugated Polymer. 3. Synthesis and Amphiphilic Property of Core-glycoconjugated Star-shaped Polystyrene”
A. Narumi, T. Satoh, H. Kaga, T. Kakuchi

8. “Synthesis of Amphiphilic Triblock Copolymer of Polystyrene and Poly(4-vinylbenzyl glucoside) via TEMPO-mediated Living Radical Polymerization”
A. Narumi, T. Matsuda, H. Kaga, T. Satoh, T. Kakuchi
Polymer, 43, 4835-4840 (2002)

9. “Glycoconjugated Polymer. II. Synthesis of Polystyrene-block-poly(4-vinylbenzyl glucoside) and Polystyrene-block-poly(4-vinylbenzyl maltohexaoside) via 2,2,6,6-Tetramethylpiperidine-1-oxyl-mediated Living Radical Polymerization”
A. Narumi, T. Matsuda, H. Kaga, T. Satoh, T. Kakuchi
Polymer J., 33, 939-945 (2001)

10. “Chirality Induction in Cyclocopolymerization. 14. Template Effect of 1,2-Cycloalkanediol in the Cyclocopolymerization of Bis(4-vinylbenzoate)s with Styrene”
T. Kakuchi, A. Narumi, H. Kaga, Y. Yamauchi, M. Obata, T. Uesaka, K. Yokota
Macromolecules, 34, 38-43 (2001)