

A new type of underwater adhesion was created in imitation of barnacle's adhesion.

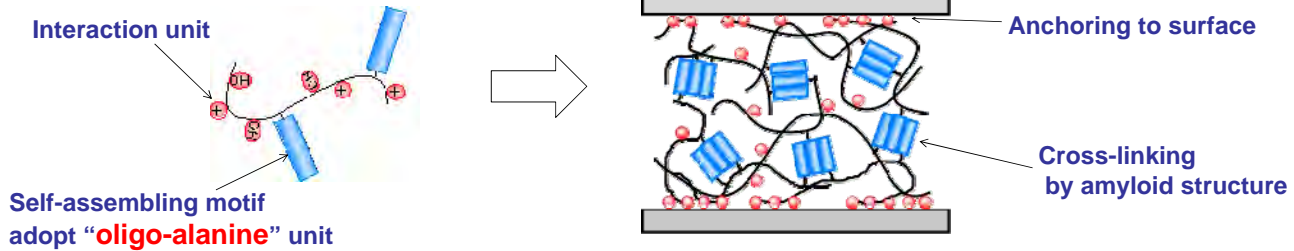
## 1. Interesting Points in barnacle's adhesion

1. No covalent bonding between protein (no catechol) crosslinking by molecular interaction
2. Cp-19k may interact with various surfaces

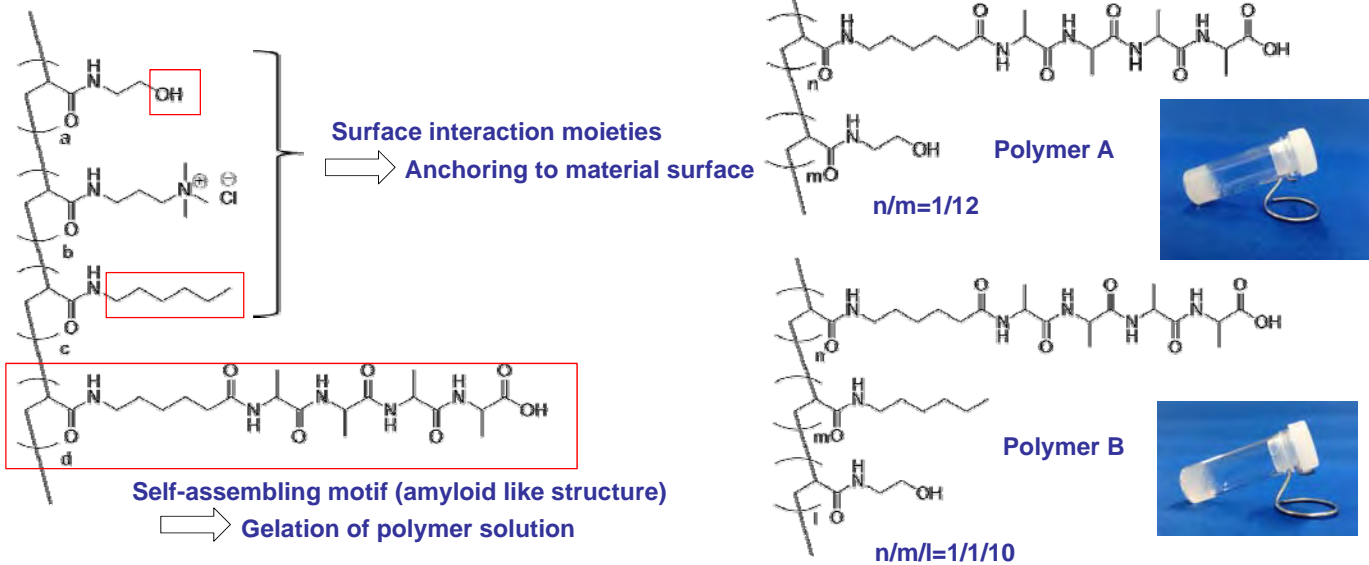


## 2. Design of barnacle adhesive cement mimetics

- Essense**
- ① Self-assembling of polymer (cross-linking)
  - ② Interaction with material surface



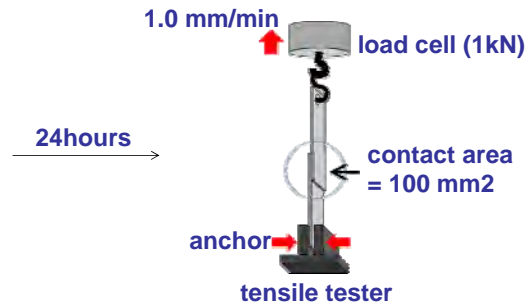
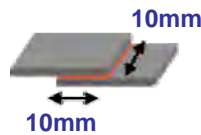
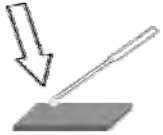
## 3. Mimetic of barnacle adhesive cement



## 4. Adhesion of various materials by gelation of aqueous solution of barnacle mimetic polymer solution

10 wt% polymer sol. + WSC  
+ HONSu + hexylamine

cured at room  
temperature in humid air



stainless-steel plate  
polyethylene  
PMMA  
6-nylon

material	Polymer A	Polymer B
stainless-steel	24kPa	21kPa
polyethylene	128kPa	132kPa
PMMA	91kPa	402kPa
6-nylon	74kPa	283kPa

## Patent Licensing Available

Patent No.: PCT/JP2014/068499

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