FG60411 Biomaterial Science
Tochibaru Enoma
IOSIIII Idi U ETIOIIId Professor, PhD, Paper Device and Eco-friendly materia

Biomaterial Science (2015 Schedule)			
#	Date	Content	
1	10/6	History of papermaking	
2	10/13	Pulps – Beating and fiber properties	
3	10/20	Pulps – Additives and functions	
4	10/27	Papermaking processes & interfiber bonding	
5	11/10	Paper- Structural properties	
6	11/17	Paper– Surface properties	
7	11/24	Paper–Wetting and absorption properties	
8	12/1	Paper- Mechanical and optical properties	
9	12/8	Polysaccharide chemistry by Assoc Prof Akiko Nakagawa	
10	12/15	Recent research of paper science and technology	
11	12/22	Examination	

# Lecture information and contact

- Homepage of "Biomaterial Science (T. Enomae)"
- http://www.enomae.com/
   → Handouts in lecture(講義資料)

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E-mail address

 t@enomae.com
 for any questions and visit to laboratory
 (Bio-Agr. Bldg. 生農C209 or 総合A618)



















### Inter-fiber bond • Effect of water on interfiber bond formation Q. Suppose two crossing flat fibers with Fiber

a square , length L on a side at the crossing point. As they dry and the interfiber distance d comes to 1 mm, How much contraction stress develops between the two fibers?























# Paper properties – Fundamental and applied properties

- Conditioning
- Structure
- Surface chemistry
- Liquid absorption
- Mechanical properties
- Optical properties

# Conditioning and test atmosphere

#### >23 °C 50% RH (Relative Humidity)

- Paper properties depend on humidity, but less on temperature
- although temperature difference by more than 10 °C changes ex. tensile strength significantly.



















