Jiabin LUAN

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EDUCATION

M.S., Chemistry and Physics of Polymers, **Fudan University**, Shanghai. Sep. 2013 - Jun. 2016

B.E., Materials Science and Engineering, **University of Science and Technology Beijing (USTB)**, Beijing. Sep. 2007 - Jun. 2013

RESEARCH & WORK EXPERIENCE

State Key Laboratory of Molecular Engineering of Polymers, **Fudan University** Sep. 2013 - Jun. 2016

Research Assistant, Molecular Design and Biomedical Applications of an Injectable Hydrogel (6 papers and 2 patents)

Principal designer and investigator of the whole project:

- Synthesized mPEG−PLGA−mPEG triblock copolymers with different coupling agents and revealed a positional isomeric effect of coupling agents on thermogelation of the triblock copolymer aqueous solutions for the first time.
- Designed and synthesized a novel selenium-containing thermogel which was capable of coordinating with the antitumor drug cisplatin; achieved a controlled delivery of cisplatin by coordination competition in the presence of glutathione.
- Developed a paclitaxel-loaded thermogel as a facile "glue coating" to alleviate periprosthetic fibrous capsule formation. The microgram-level paclitaxel-loaded thermogel formulation displayed a sustained release manner up to 57 days *in vitro* and alleviated the fibrous capsule formation in *vivo* effectively and reproducibly.

Contributions to the experimental design, characterization and discussion:

- Created a platinum-polymer conjugate thermogel and realized a long-term delivery of cisplatin for 2 months.
- Developed an injectable prodrug hydrogel to co-deliver cisplatin and paclitaxel for ovarian cancer treatment.
- Developed an injectable thermosensitive PEG−polyester hydrogel formulation of liraglutide and demonstrated a promising once-weekly delivery system of liraglutide for long-term glycemic control.
- Synthesized an injectable hydrogel for intraocular drug delivery, increased the effective drug duration in eyes by 18 times, bringing breakthrough to reduce pain and risk of frequent ocular punctures.

School of Materials Science and Engineering, USTB Sep. 2010 - Jun. 2013

Undergraduate Research Assistant, Biomedical Applications of Bacterial Cellulose (BC) (3 papers and 2 patents)

- Designed a new class of would dressing with both good antimicrobial activity and biocompatibility by impregnating silver sulfadiazine, a gold standard in topical burn treatment, into BC.
- Prepared conducting gel membranes by *in situ* polymerization of aniline onto BC scaffold and investigated the optimized preparation conditions such as water content and reaction time.

MicroPort Scientific Corporation, Shanghai Jun. 2016 - Aug. 2017

Quality Assurance (QA) Engineer, Development of a Medical Device − Aortic Valve

- Developed a method and apparatus for testing the deflection of individual leaflets for a multi-leaflet heart valve prosthesis.
- Developed a HPLC method for testing concentrations of formaldehyde and glutaraldehyde in the solution at the same time.
- Optimized the testing method of the thickness of individual leaflets for a multi-leaflet heart valve prosthesis.
- Conducted product quality control activities, including quality assurance throughout the whole process, risk management, analysis of standards, *etc*.

PUBLICATIONS (*: *corresponding author;* [1]: *equal contribution; Citation Counts from Google Scholar, Nov., 2017*)

1. **Luan, J.**, Cui, S., Wang, J., Shen, W., Yu, L.*, Ding, J. Positional isomeric effects of coupling agents on the temperature-induced gelation of triblock copolymer aqueous solutions. ***Polym. Chem.***, 2017, *8*, 2586-2597. [Link] (***Front Cover***, Cites: 4)
2. **Luan, J.**[1], Zhang, Z.[1], Shen, W., Sun, J.*, Yu, L.*, Ding, J. Low-dose paclitaxel-loaded thermogel as a facile "glue coating" to alleviate periprosthetic fibrous capsule formation. 2017. (To be submitted)
3. Shen, W., Chen, X., **Luan, J.**, Wang, D., Yu, L.*, Ding, J. Sustained co-delivery of cisplatin and paclitaxel *via* an injectable prodrug hydrogel for ovarian cancer treatment. ***ACS Appl. Mater. Interfaces***, 2017, *9*, 40031-40046. [Link]
4. Chen, Y., **Luan, J.**, Shen, W., Lei, K., Yu, L.*, Ding, J. Injectable and thermosensitive hydrogel containing liraglutide as a long-acting antidiabetic system. ***ACS Appl. Mater. Interfaces***, 2016, *8*, 30703-30713. [Link] (Cites: 12)

5. **Luan, J.**, Shen, W., Chen, C., Lei, K., Yu, L.*, Ding, J. Selenium-containing thermogel for controlled drug delivery by coordination competition. ***RSC Adv.***, 2015, 5, 97975-97981. [Link] (Cites: 11)
6. Shen, W., **Luan, J.**, Cao, L., Sun, J., Yu, L.*, Ding, J. Thermogelling polymer–platinum (IV) conjugates for long-term delivery of cisplatin. ***Biomacromolecules***, 2015, *16*, 105-115. [Link] (Cites: 51)
7. Zhang, L.[1], Shen, W.[1], **Luan, J.**, Yang, D., Wei, G.*, Yu, L.*, Lu, W., Ding, J. Sustained intravitreal delivery of dexamethasone using an injectable and biodegradable thermogel. ***Acta Biomater.,*** 2015, *23*, 271-281. [Link] (Cites: 27)
8. Wu, J., Zheng, Y.*, Song, W., **Luan, J.**, Wen, X., Wu, Z., Chen, X., Wang, Q., Guo, S. *In situ* synthesis of silver-nanoparticles/bacterial cellulose composites for slow-released antimicrobial wound dressing. ***Carbohydr. Polym.***, 2014, 102, 762-771. [Link] (Cites: 127)
9. Yue, L., Zheng, Y.*, **Luan, J.**, Yu, Y., Xie, Y., Wu, J. Effects of water content on preparation and properties of bacterial cellulose/polyaniline composite gel-membranes. ***Acta Polym. Sin.***, 2014, 9, 1228-1237. [Link] (Cites: 2)
10. **Luan, J.**, Yang, P.* The application of Gibbs theory in the teaching of Fundamentals of Materials Science. ***China Metallurgical Education,*** 2013, 6. [Link] (*In Chinese*, Cites: 2)
11. **Luan, J.[1]**, Wu, J.[1], Zheng, Y.*, Song, W., Wang, G., Guo, J., Ding, X. Impregnation of silver sulfadiazine into bacterial cellulose for antimicrobial and biocompatible wound dressing. ***Biomed. Mater.***, 2012, 7(6):065006. [Link] (Cites: 40)

PATENTS

1. Yu, L., **Luan, J.**, Ding, J. **Chinese Patent**, Publication number: CN105287362A.
2. Yu, L., **Luan, J.**, Ding, J. **Chinese Patent**, Publication number: CN105384920A.
3. Zheng, Y., Cui, Q., Wu, J., Gao, S., **Luan, J.**, Liu, G. **Chinese Patent**, Publication number: CN102727926B.
4. Zheng, Y., Cui, Q., Wu, J., Peng, S., **Luan, J. Chinese Patent**, Publication number: CN102604142A.

AWARDS

Outstanding Graduates of Universities in Beijing (Top 3%) — Jun. 2013
Outstanding Graduate Thesis of USTB (Top 3%) — Jun. 2013
National Encouragement Scholarship (Top 5%, Twice) — Oct. 2008 & Oct. 2010
Winner of the Scientific Thesis Writing Competition at Fudan University (Top 5 among the university) — Apr. 2015
Academic Excellence Scholarship (2^{nd} and 3^{rd} class) (Top 10% and 20%) — Oct. 2015 & Oct. 2013
Award for Research Cooperation (Twice, Intergroup and Intragroup) & Award for Challenging Scientific Problems, Biomedical Materials Group, Fudan University — Apr., Oct. 2015 & Mar. 2016
Third Prize of 25^{th} National Physics Contest for College Students (Beijing Division, Top 2%) — Dec. 2008
Third Prize in National English Contest for College Students (Top 3%) — May. 2012

ACADEMIC ACTIVITIES

The 15^{th} Shanghai Biomaterials Symposium, Shanghai, **Oral Presentation** — Jan. 2016
2015 Chinese Biomaterials Congress, Haikou, **Oral Presentation** — Nov. 2015
Shanghai 'Stem cell and medicine' graduate summer school, **Outstanding Students** (6/60) — Jul. 2015
'General Chemistry', Fudan University, **Teaching Assistant** — Sep. 2014 - Jan. 2015

SKILLS

Software: Origin, ChemBioDraw (Proficient); Adobe Photoshop and Illustrator, 3ds Max, Matlab (Familiar)
Experimental Skills: *In Vivo* Micro-CT imaging system, Optical and X-ray small animal imaging system, Flow cytometry, XRD, NMR, HPLC, GPC, GPC-MALS-VIS, Rheometer, Zetasizer Nano, Cell culture, FTIR, UV-Vis, Polarizing microscope
Others: Certificate of Certified Six Sigma Black Belt; National Computer Rank Examination Certificate (C++ and Database)

INTERNSHIP & EXTRACURRICULAR ACTIVITIES

Bayer MaterialScience Summer School (40 in the nation): Electrochromic PCS Electric Automobile business case — Jul. 2014
Team leader of Academic Department, Graduate Students Union of Department of Macromolecular Science, Fudan University — Sep. 2013 - Jun. 2014
Volunteer of the 29^{th} Olympics and the 13^{th} Paralympics in Beijing — Jul. 2008 - Oct. 2008

STANDARDIZED TESTS

TOEFL IBT (Aug. 2017): **111**/120 (R29+L29+S24+W29); **GRE General** (Jun. 2010): V540+Q800+AW3.5