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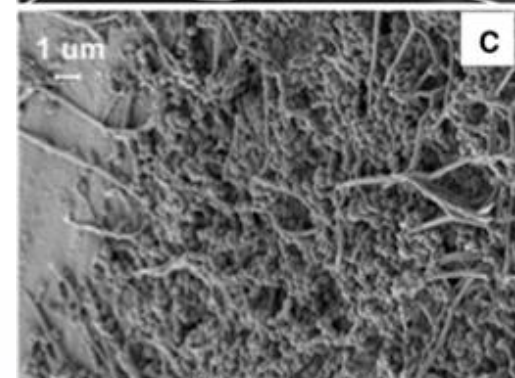
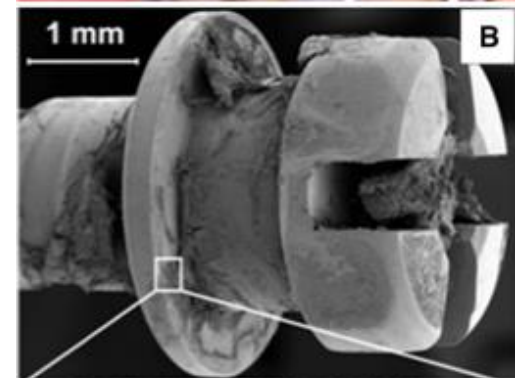


Dr. Li Mei

Research fields:

- Oral biofilm and bacterial adhesion
- Oral hygiene in orthodontic patients
- Enamel demineralization and remineralization
- Dental biomaterials, antimicrobial materials
- Randomized controlled clinical trial (RCT)
- Evidence-based dentistry
- Atomic Force Microscopy (AFM)

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The research results and clinical outcomes have been presented at conferences:

- **Mei L**, Farella M. Prevention of enamel demineralisation using CPP-ACP: is it effective in vivo? **49th Australian Begg Society of Orthodontists Meeting** (ABSO) Cairns, **Australia** (2014). (Oral Presentation).
- **Mei L**, Peng Y, Farella M. Enhancing Oral Hygiene in Patients With Fixed Appliances: A Randomized Controlled Trial. **14th Annual Session of American Association of Orthodontists** (AAO) New Orleans, **US** (2014). (Oral Presentation).
- **Mei L**, Antoun JS, Farella M. Prevention of enamel demineralisation using CPP-ACP: is it effective in vivo? **49th Australian Begg Society of Orthodontists (ABSO) Meeting**, Cairns, **Australia** (2014). (Oral Presentation).
- **Mei L**, Peng Y, Stacknik S, Qu W, Farella M. A randomized clinical trial comparing four different modalities for reducing orthodontic biofilms. **89th Congress of the European Orthodontic Society** (EOS), Reykjavik, **Iceland** (2013).
- **Mei L**. A contact-killing surface to prevent oral biofilm. **9th World Biomaterials Congress** (9th WBC) Chengdu, **China** (2012). (Oral Presentation).
- **Mei L**, Sandham A, Chen YX, Van der Mei HC, Busscher HJ. Biofilm formation on different orthodontic biomaterials. **International Symposium of Microbial Biofilm** (ISMB), Chengdu, **China** (2011). (Oral Presentation).
- **Mei L**, Ren Y, Van der Mei HC, Busscher HJ. Preventive measures for biofilm formation on orthodontic composite resin. **87th Congress of the European Orthodontic Society** (EOS) Istanbul, **Turkey** (2011).
- **Mei L**, Ren Y, Van der Mei HC, Busscher HJ. Orthodontic biofilms: clinical and research concerns. **W.J. KOLFF Annual Conference** (BMSA) Schiermonnikoog, **The Netherlands** (2011).



The research results and clinical outcomes have been presented at conferences:

- **Mei L.** Biofilm prevention on orthodontic composite resin. **14th China Stomatological Association Annual Meeting (CSA)**, Sep 2012, Xi An, **China**.
- **Mei L.**, Han X, Xu X, Chen Y. Biofilm formation: orthodontic bracket matters. 2012 **Sino-Japan Dental Conference**, Apr 2012, Chengdu, **China**.
- **Mei L.** Bifilms in orthodontics: something old, something new, something borrowed. **2012 Sino-Japan Dental Conference**, Apr 2012, Chengdu, **China**.
- **Mei L.**, Ren Y, Van der Mei HC, Busscher HJ. Bacterial adhesion forces mediating biofilm formation to orthodontic materials, **7th International Orthodontic Congress (WFO)**, Sydney, **Australia** (2010).
- **Mei L.**, Ren Y, Van der Mei HC, Busscher HJ. Oral bacterial adhesion forces on bovine enamel coated with saliva, **W.J. KOLFF Annual Conference (BMSA)** Schiermonnikoog, **The Netherlands** (2010).
- **Mei L.**, Henk Busscher, Ren Y, Henny Van der Mei. Influence of adhesive surface roughness on streptococcal adhesion forces, **86th Congress of the European Orthodontic Society (EOS)**, Portoroz, **Slovenia** (2010).
- **Mei L.**, Ren Y, Busscher HJ, Van der Mei HC. Bacterial adhesion forces at the bracket-adhesive-enamel junction. **85th Congress of the European Orthodontic Society (EOS)** Helsinki, **Finland** (2009). (Oral Presentation).
- **Mei L.**, Ren Y, Guo J. Comparison of the efficiency of two treatment approaches for lingually displaced teeth. **84th Congress of the European Orthodontic Society (EOS)** Lisbon, **Portugal** (2008).
- **Mei L.**, Guo J, Qu W, Chen Y. Comparison of the efficiency of two approaches in making space for lingually displaced teeth: A randomized clinical trial. **15th International Students Congress of Medical Science**, Groningen, **The Netherlands** (2008).



The research results and clinical outcomes have been published:

- Li J, Xie X, Wang Y, Yin W, Antoun JS, Farella M, **Mei L**. Long-term remineralizing effect of casein phosphopeptide-amorphous calcium phosphate (CPP-ACP) on early caries lesions in vivo: A systematic review. *Journal of Dentistry* 2014;(14)00096-7. doi: 10.1016.
- Yuan H, Li J, Chen L, Cheng L, Cannon RD, **Mei L**. Esthetic comparison of white spot lesion treatment modalities using spectrometry and fluorescence. *The Angle Orthodontist* 2014; 84(2):343-349.
- Peng Y, Wu R, Qu W, Wu W, Chen J, Fang J, Chen Y, Farella M, **Mei L**. The effect of visual method vs. plaque disclosure in enhancing oral hygiene in adolescents and young adults: a single blind randomized controlled trial. *American Journal of Orthodontics and Dentofacial Orthopedics* 2014; 145:280-286.
- Pei Z, Wang B, Zhang F, Niu Z, Shi S, Cannon RD, **Mei L**. Response of human periodontal ligament cells to baicalin. *Journal of Periodontology*, 2014 Jan 30 (Epub ahead of print).
- Ren Y, Jongsma MA, **Mei L**, van der Mei HC, Busscher HJ. Orthodontic treatment with fixed appliances and biofilm formation-a potential public health threat? *Clinical Oral Investigations*, 2014 Apr 13. [Epub ahead of print].
- **Mei L**, Busscher HJ, van der Mei HC, Ren Y. Influence of surface roughness on streptococcal adhesion forces to composite resins. *Dental Materials*, 2011; 27: 770–778.
- **Mei L**, Ren Y, Busscher HJ, Van der Mei. Poisson analysis of streptococcal bond-strengthening on saliva-coated enamel. *Journal of Dental Research* 2009; 88:841-845.
- **Mei L**, Ren Y, Loontjens TJ, Van der Mei HC, Busscher HJ. Contact killing of adhering streptococci by a quaternary ammonium compound incorporated in an acrylic resin. *International Journal of Artificial Organs*. 2012; 35:854-863.



The research results and clinical outcomes have been published:

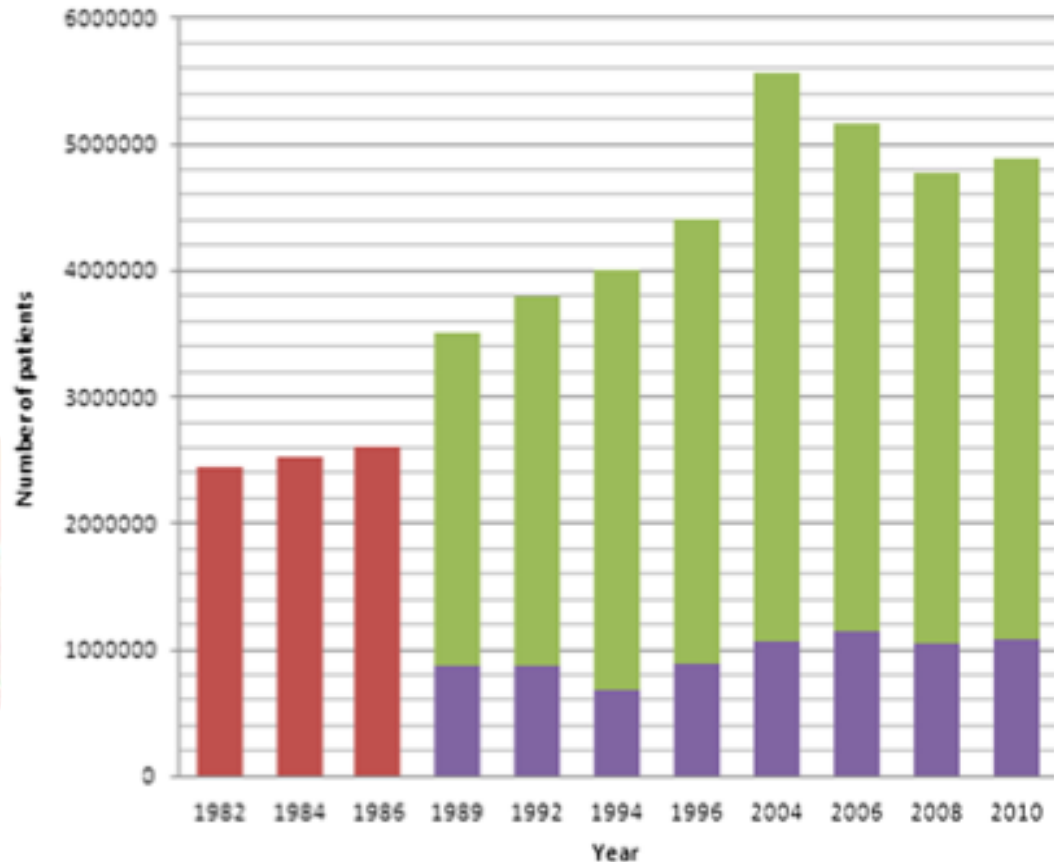
- Duan P, Zhang L, Zhao Q, **Mei L**. Research progress on the biomechanics of self-ligating bracket systems. *International Journal of Stomatology*, 2012(5): 661-663.
- **Mei L**, Van der Mei HC, Ren Y, Norde W, Busscher HJ. Poisson analysis of streptococcal bond strengthening on stainless steel with and without a salivary conditioning film. *Langmuir* 2009; 25:6227-6231.
- **Mei L**, Busscher HJ, Van der Mei HC, Chen Y, Ren Y. Oral bacterial adhesion forces to biomaterial surfaces constituting the bracket-adhesive-enamel junction in orthodontic treatment. *European Journal of Oral Sciences* 2009; 117:419-426.
- Li JY, Lim AJZ, Lum SHB, Saion MAM, **Mei L**. Clinical Applications of Cone-Beam Computed Tomography in Endodontics: A Systematic Review. *Journal of Dental Applications*. 2014;1(2): 16-20.
- **Mei L**, Guo Jun, Chen Yangxi. Displacement of impacted mandibular canine: a case report. *West China Journal of Stomatology* 2008; 26:457-458.
- **Mei L**, Ye Q, Qiao J, Qu W, Wu TX. Dissemination and application of Evidence-based Medicine in orthodontic practices. *Chinese Journal of Evidence-Based Medicine*. 2005; 5(11): 882-884.
- Peng Y, Chen YX, **Mei L**. Biofilms in orthodontics: a review. *Journal of Modern Stomatology*. 2013; 2(27): 109-113.
- Duan P, **Mei L**, Chen Y. Development and clinical application of fixed functional appliances. *International Journal of Stomatology*. 2010; 5(23): 58-60.
- Guo J, **Mei L**, Gong H, et al. Designs of vertical loops for correcting linguallly displaced teeth. *West China Journal of Stomatology*, 2007; 6(25): 96-97.



Biofilm in Orthodontics

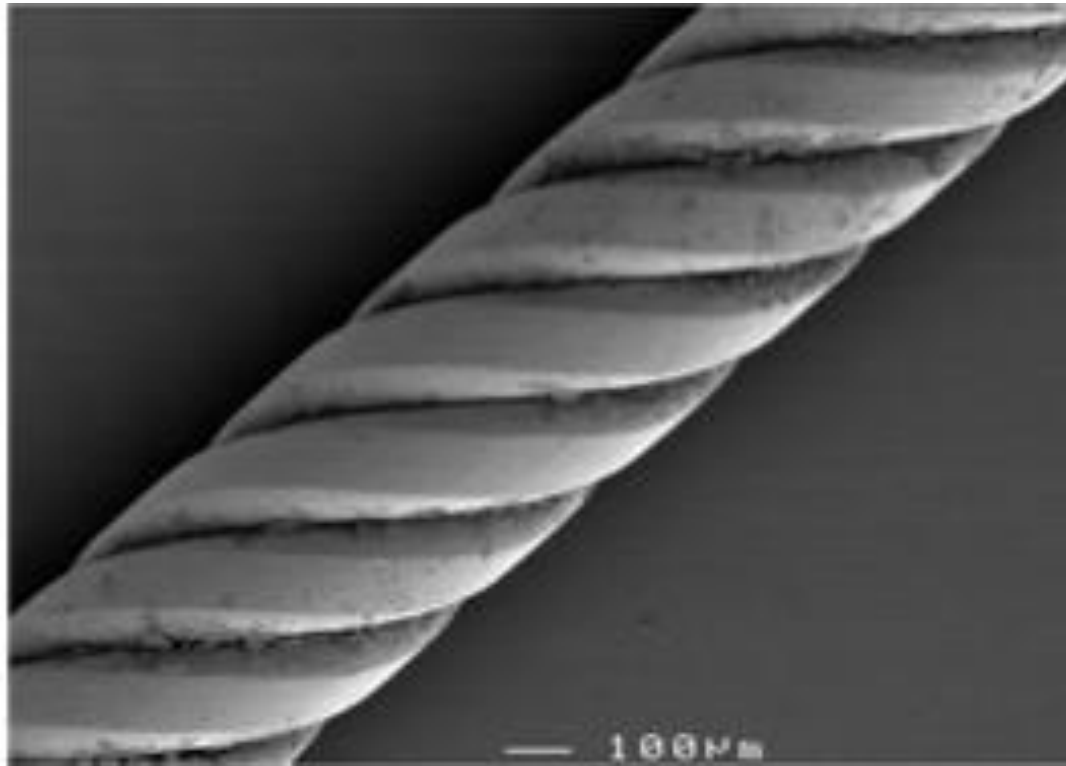
Orthodontic treatment with fixed appliances and biofilm formation—a potential public health threat

Fig. 1 Number of orthodontic patients in North America over the past three decades. For 1982–1986, no data are available about the percentage of adult patients [1]





- Scanning electron micrograph of a multistrand wire used for fixed retainers. Biofilm formation in the niches between the wires is clearly visible





- White spot lesions, cavities (upper dentition), and gingival inflammation (lower dentition) caused by orthodontic biofilms after removal of fixed orthodontic appliance



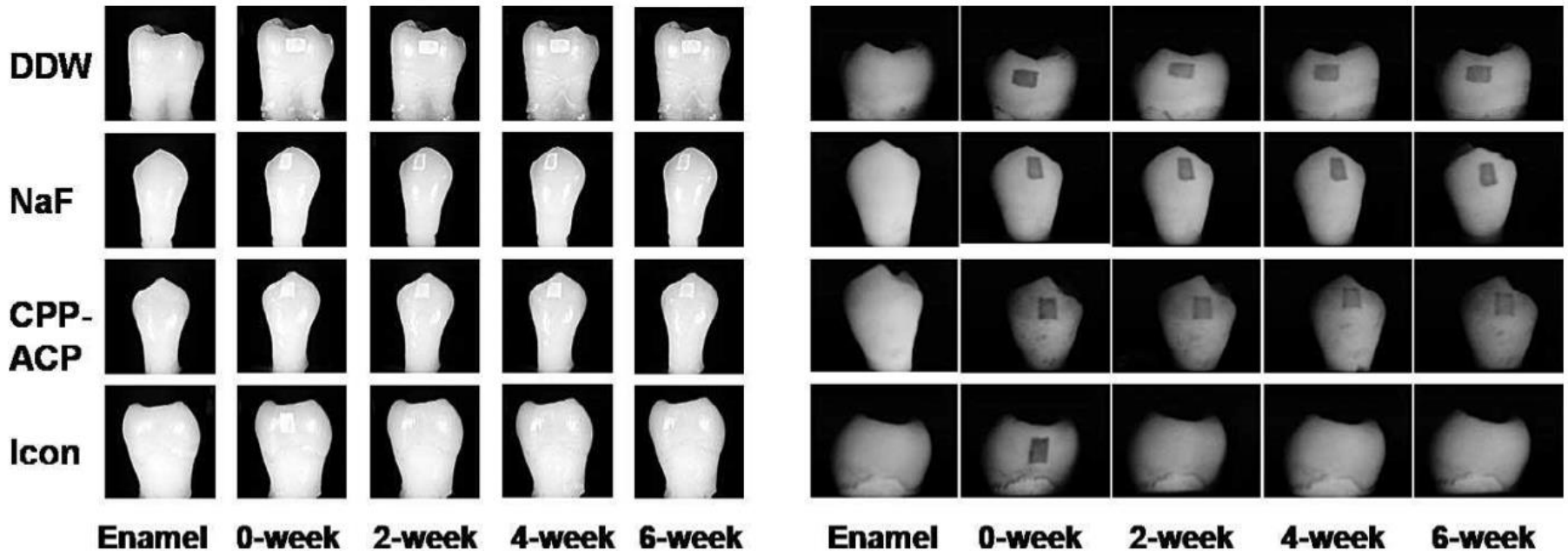


- Images illustrating the severe consequences of biofilm accumulation, including enamel demineralization and gingival inflammation.



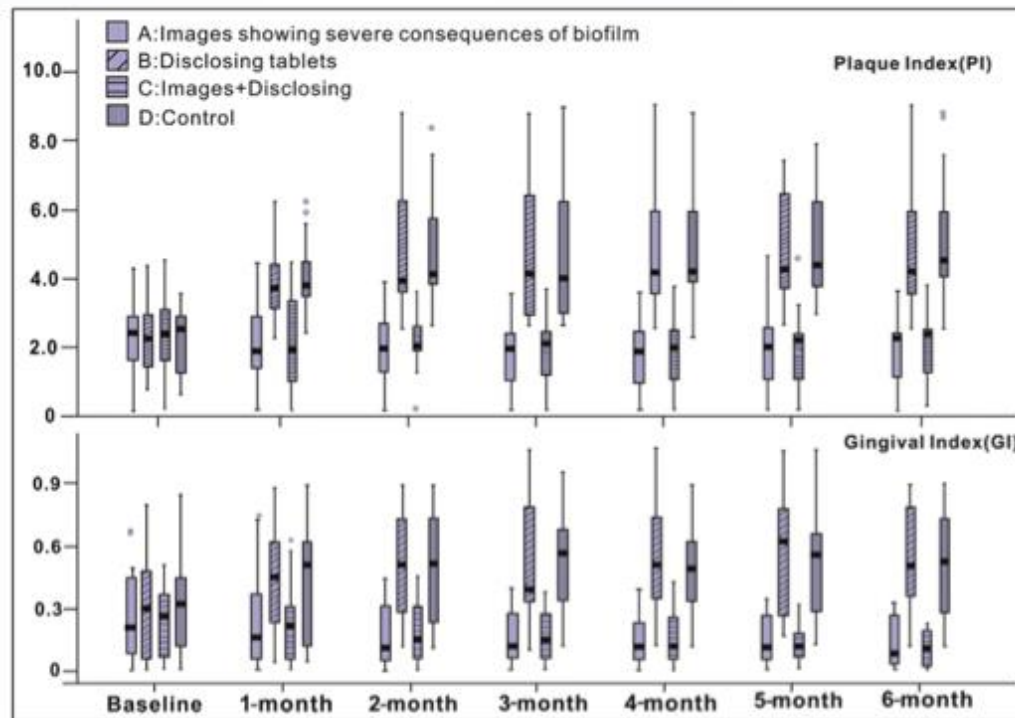


- Four different treatments of WSLs.
- Resin infiltration is more effective than NaF or CPP-ACP in providing esthetic improvement of WSLs.





- Effect of visual method vs. plaque disclosure in enhancing oral hygiene in adolescents and young adults. The use of images showing the severe consequences of biofilm accumulation enhanced the oral hygiene of patients treated with fixed appliances.



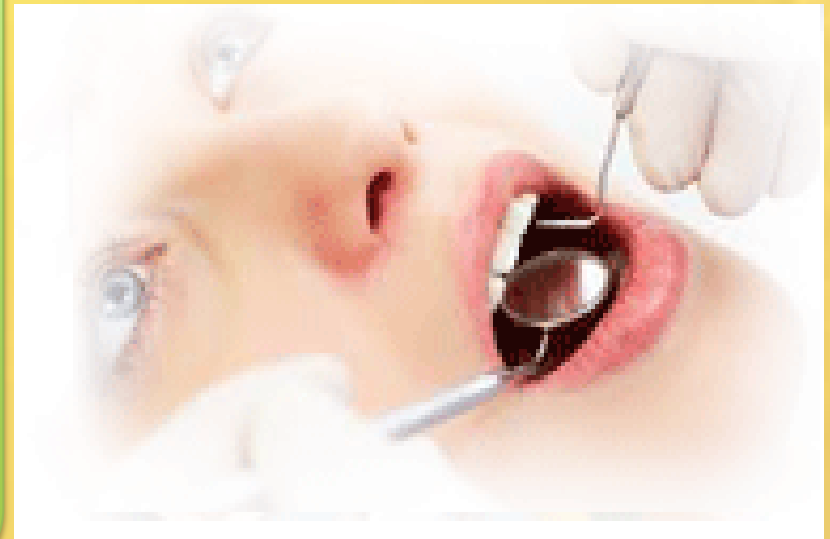


Summary

- The number of patients at risk of biofilm-related complications, including WSLs, caries, and gingivitis, has increased tremendously over the past two decades.
- Fixed braces and other orthodontic appliances hamper the maintenance of oral hygiene and provide numerous surfaces in the oral cavity to which bacteria can adhere and form a biofilm.
- Improved preventive measures and antimicrobial materials are urgently required to prevent biofilm-related complications of orthodontic treatment from overshadowing its functional and esthetic advantages.

Dentistry Related Journals

- JBR Journal of Interdisciplinary Medicine and Dental Science
- Journal of Oral Hygiene & Health
- Oral Health and Dental Management



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