

## Stick Tech

# Fibre Reinforced Composites

## Scientific Literature

### Academic Dissertations

1. **Dyer S.R.** Fiber-reinforced composite fixed partial denture design: Mechanical properties of the composite and load bearing capacity. Academic Dissertation. University of Turku, ser. D -Tom. 651. Turku 2005, FINLAND.
2. **Terzvergil A.** Farkli yönde ve yadidami cam fiber ile cüqlendirilen kompozit materyallerin mine ve dentin baglantilarinn degerlendirimesi. Academic Dissertation. University of Gazi, Ankara 2004, Turkey.
3. **Puska M.** Acrylic bone cement; a study on the modification of polymethacrylate-based bone cement by porogen fillers, reinforcing glass fibres and semi-interpenetrating network structure. Academic Dissertation. University of Turku, ser. D -Tom. 640. Turku 2004, FINLAND.
4. **Narva K.** Fiber-reinforced denture base polymer: clinical performance and mechanical properties. Academic Dissertation. University of Turku, ser. D -Tom. 630. Turku 2004, FINLAND.
5. **Matinlinna J.** Silane chemistry aspects in some conventional and novel dental biomaterials. Academic Dissertation. University of Turku, ser. D -Tom. 620. Turku 2004, FINLAND.
6. **Heikkinen V.** Studies on polymer matrices of dental fiber-reinforced composites; release of residual methacrylate, water sorption and solubility. Academic Dissertation. University of Turku, ser. D -Tom. 573. Turku 2003, FINLAND.
7. **Özcan M.** Adhesion of resin composites to biomaterials in dentistry: an evaluation of surface conditioning methods. Academic Dissertation, University of Groningen, ISBN 90-367-194-9, Groningen 2003, the NETHERLANDS.
8. **Tanner J.** Adhesion of oral microbes to dental fiber reinforced composites. With emphasis on Streptococcus mutans and Candida albicans. Academic Dissertation. University of Turku, ser. D -Tom. 568. Turku 2003, FINLAND.

## Original FRC Related Research Articles

1. **Bouillaguet S, Schütt A, Alander P, Schwaller P, Buerki G, Michler J, Cattani-Lorente M, Vallittu PK, Krejci I.** Hydrothermal and mechanical stresses degrade fibre-matrix interfacial bond strength in dental fiber-reinforced composites. *J Biomed Mater Res Part B: Appl Biomater* 2006; 76B: 98-105.
2. **Meiers J, Freilich M.** Use of a prefabricated fiber-reinforced composite resin framework to provide a provisional fixed partial denture over an integrating implant: a clinical report. *J Prosthet Dent* 2006; 95: 14-18.
3. **Meiers JC, Freilich MA.** Design and use of a prefabricated fiber-reinforced composite substructure for the chairside replacement of missing premolars. *Quintessence Int* 2006; 37: 449-454.
4. **Kargul B, Caglar E, Kabalay U.** Glass fiber-reinforced composite resin as fixed space maintainer in children: 12-month clinical follow-up. *J Dent Child* 2005; 72: 109-112.
5. **Garoushi SK, Ballo AM, Lassila LVJ, Vallittu PK.** Fracture resistance of fragmented incisal edges restored with fiber-reinforced composite. *J Adhes Dent* 2006; 8: 91-95.
6. **Sadeghi M.** Bond strength of glass fiber reinforced composite and base metal frameworks used in resin-bonded fixed partial dentures. *Beheshti Univ Dent J* 2005; 22: 95-99.
7. **Sadeghi M, Richards L.** In vitro study of fracture strength of resin-bonded glass fiber-reinforced composite anterior fixed partial dentures. *Dent Res J* 2005; 2: 14-18.
8. **Meiers JC, Kazemi RB.** Chairside replacement of posterior teeth using a prefabricated fiber-reinforced resin composite framework technique: a case report. *J Esthet Restor Dent* 2005; 17: 335-342.
9. **Fennis WMM, Terzvergil A, Kuijs RH, Lassila LVJ, Kreulen CM, Creugers NHJ, Vallittu PK.** In vitro fracture resistance of fiber reinforced cups-replacing composite restorations. *Dent Mater* 2005; 21(6): 565-72.
10. **Fokkinga WA, Le Bell AM, Kreulen CM, Lassila LVJ, Vallittu PK, Creugers NHJ.** Ex vivo fracture resistance of direct resin composite complete crowns with and without ports on maxillary premolars. *Int Endod J* 2005; 38: 230-7.
11. **Uctasli S, Terzvergil A, Lassila LVJ, Vallittu PK.** The degree of conversion of fibre-reinforced composites polymerized using different light-curing sources. *Dent Mater* 2005; 21(5): 469-75.
12. **Visser HJ, van Rensburg J.** fibre reinforced composites—alternative for lost teeth replacement. *SADJ* 2005; 60(1): 20-2.

13. **Artega S, Meiers JC.** Single-tooth replacement with a chairside prefabricated fiber-reinforced resin composite bridge: a case study. *Gen Dent* 2004; 52(6): 517-9.
14. **EI-Mowafy O.** Polymerization shrinkage of restorative composite resins. *Pract Proced Aesthet Dent* 2004; 16(6). 452-3, 455.
15. **Freilich MA, Duncan JP, Alarcon EK, Eckrote KA, Goldberg AJ.** The design and fabrication of fiber-reinforced implant prostheses. *J Prosthet Dent* 2002; 88: 449-54.
16. **Chai J, Takahashi Y, Hisama K, Shimizu H.** Effect of water storage on the flexural properties of three glass fiber-reinforced composites. *Int J Prosthodont.* 2005; 18: 25-33.
17. **Mannocci F, Sherriff M, Watson TF, Vallittu PK.** Penetration of bonding resins into fibre-reinforced composite posts: a confocal microscopic study. *Int Endod J* 2005; 38(1): 46-51.
18. **Fokkinga WA, Kreulen CM, Vallittu PK.** A structured analysis of in vitro failure loads and failure modes of fiber, metal, and ceramic post-and-core systems. *Int J Prosthodont* 2004; 17: 476-482.
19. **Geserick M, Ball J, Wichelhaus A.** Bonding fiber-reinforced lingual retainers with color-reactivating flowable composite. *J Clin Orthodontics* 2004; (10): 560-562.
20. **Szabo G, Benke B.** Glass fiber polymerization--an effective method of increasing fracture resistance of the denture base (case report)] *Fogorv Sz* 2003; 96: 211-5 (Hungarian).
21. **Xie QF, Zhang L, Zheng G.** Mechanical properties of preimpregnated glass fiber composite resins. *Hua Xi Kou Qiang Xue Za Zhi* 2004; 22: 317-9 (Chinese).
22. **Aydin MY, Kargül B.** Glass-fiber reinforced composite in management of avulsed central incisor: a case-report. *J dent Child (Chic).* 2004; 71: 66-8.
23. **Freilich MA, Meiers JC.** Fiber-reinforced composite prostheses. *Dent Clin N Am* 2004; 48: 545-562.
24. **Kim SH, Watts DC,** Effect of fiber reinforcement and water storage on fracture toughness (KIC) of polymer-based provisional crown and FPD materials. *Int J Prosthodont* 2004; 17: 318-322.
25. **Chai J, Takahashi Y, Hisama K, Shimizu H.** Water sorption and dimensionals stability of three glass fiber-reinforced composites. *Int J Prosthodont.* 2004;17:195-9.
26. **Hamza TA, Rosenstiel SF, Elhosary MM, Ibraheem RM.** The effect of fiber reinforcement on the fracture toughness and flexural strength of provisional restorative resins. *J Prosthet Dent.* 2004; 91: 258-264.
27. **Kim SH, Watts DC.** The effect of reinforcement with woven E-glass fibers on the impact strength of complete dentures fabricated with high-impact acrylic resin. *J Prosthet Dent.* 2004; 91: 274-280.

28. **Butterworth C, Ellakwa AE, Shortall A.** Fibre-reinforced composites in restorative dentistry. *Dent Update* 2003; 30: 300-306.
29. **Kargül B, Caglar E, Kabalay U.** Glass fiber reinforced composite resin space maintainer: case reports. *J Dent Child (Chic)* 2003; 70(3): 258-61.
30. **Säilynoja ES, Shinya A, Gomi H, Ishii Y.** The effect of immersion temperature on the flexural strength of a pre-coated fiber reinforced composite resin. *Prosthodontic Research & Practice*, 2003; 2: 1-10.
31. **Hugo B.** Direkte Kompositbrücken im Frontzahnbereich. *Quintessenz*: 2003; 11: 1163-1175. (German).
32. **Hugo B.** Intraoral hergestellte glasfaserverstärkte Kompositbrücken zum Ersatz einzelner Frontzähne (Chairside fiber-reinforced resin composite fixed partial dentures). *Inf Orthod Kieferorthop* 2003; 35: 55-63. (German).
33. **Bouillaguet et al** *Zahnärztliche Mitteilungen*, 2003; 93: 44-50 (German).
34. **Bouillaguet S, Schutt A, Marin I, Etechami L, Di Salvo G, Krejci I.** Replacement of missing teeth with fiber-reinforced composite FPDs: clinical protocol. *Pract Proced Aesthet Dent*, 2003; 15: 195-202.
35. **Yilmaz H, Aydin C, Caglar A, Yasar A.** The effect of glass fiber reinforcement on the residual monomer content of two denture base resins. *Quintessence Int.* 2003; 34:148-53.
36. **Xu, H.H.K., Schumacher, G.E., Eichmiller, F.C., Peterson, R.C., Antonucci, J.M., Mueller, H.J.** Continuous-fiber preform reinforcement of dental resin composite restorations. *Dental Materials* 19 (2003); 523-530.
37. **Kallio P, Moxom R.** Pre-impregnated glass-fibre reinforced splints and bridges in the occlusal therapy of periodontitis, part one. *Restorative & Aesthetic Dentistry* 2002; 4: 73-81.
38. **Kallio P, Moxom R.** Pre-impregnated glass-fibre reinforced splints and bridges in the occlusal therapy of periodontitis, part two. *Restorative & Aesthetic Dentistry* 2002; 4: 97-102.
39. **Ellakwa AE, Shortall AC, Marquis PM.** Influence of fiber type and wetting agent on the flexural properties of an indirect fiber reinforced composite. *J Prosth Dent* 2002; 88: 485-490.
40. **B. Kargül, U.Kabalay, E.Cailar.** Glassfibre reinforced composite resin bonded space maintainers. *European Journal of Paediatric Dentistry*; Vol. 3 September 2002.
41. **Ayman E. Ellakwa, Peter M. Marquis.** Influence of fiber type and wetting agent on the flexural properties of an indirect fiber reinforced composite. *The Journal of Prosthetic Dentistry* 2002; 88:485-90.

42. **Cemal Aydin, Handan Yilmaz, Alper Caglar.** Effect of glass fiber reinforcement on the flexural strength of different denture base resins. *Quintessence* 2002; vol. 33, number 6: 457-463.
43. **Kolbeck C, Rosentritt M, Behr M, Lang R, Handel G.** In vitro examination of the fracture strength of 3 different fiber-reinforced composite and 1 all-ceramic posterior inlay fixed partial denture systems. *J Prosthodont* 2002; 11(4): 248-253.
44. **Ahlstrand Wisua M, Finger Werner J.** Direct and indirect fiber-reinforced fixed partial dentures: Case reports. *Quintessence* 2002; vol. 33, number 5: 359-365.

**Articles Published by Prof. Pekka Vallittu  
and/or his Research Group**

1. **Narva KK, Lassila VJ, Vallittu PK.** Flexural fatigue of denture base polymer with fiber-reinforced composite reinforcement. *Comp: Part A* 2005; 36: 1275-1281.
2. **Tanner J, Robinson C, Söderling E, Vallittu PK.** Early plaque formation on fibre-reinforced composites in vitro. *Clin Oral Inverst* 2005; 9: 154-160.
3. **Terzvergil A, Lassila LV, Vallittu PK.** The shear bond strength of bidirectional and random-oriented fibre-reinforced composite to tooth structure. *J Dent* 2005; 33(6): 509-16.
4. **Dyer SR, Lassila LVJ, Alander P, Vallittu PK.** Static strength of molar region direct technique glass fibre-reinforced composite fixed partial dentures. *J Oral Rehabil* 2005; 32: 351-357.
5. **Narva KK, Lassila LV, Vallittu PK.** The static strength and modulus of fiber reinforced denture base polymer. *Dent Mater* 2005; 21: 421-428.
6. **LeBell AM, Tanner J, Lassila LVJ, Kangasniemi I, Vallittu PK.** Bonding of composite resin luting cement to fiber-reinforced composite root canal posts. *J Adhes Dent* 2004; 6: 319-325.
7. **Alander P, Lassila L, Vallittu P.** The span length and cross-sectional design affect values of strength. *Dent Mater* 2005; 21: 347-353.
8. **Aho AJ, Hautamäki M, Mattila R, Alander P, Strandberg N, Rekola J, Gunn J, Lassila LV, Vallittu PK.** Surface porous fibre-reinforced composite bulk bone substitute. *Cell Tissue Bank* 2004; 5(4): 213-21.

9. **Tuusa SM, Puska MA, Lassila LV, Vallittu PK.** Residual monomers released from glass-fibre-reinforced composite photopolymerized in contact with bone and blood. *J Mater Sci Mater Med* 2005; 16(1): 15-20.
10. **Lahdenperä MS, Puska MA, Alander PM, Waltimo T, Vallittu PK.** Release of chlorhexidine digluconate and flexural properties of glass fibre reinforced provisional fixed partial denture polymer. *J Mater Sci Mater Med* 2004; 15: 1349-1353
11. **Dyer SR, Lassila LV, Jokinen M, Vallittu PK.** Effect of fibre position and orientation on fracture load of fibre-reinforced composite. *Dent Mater* 2004; 20(10): 947-55.
12. **Lassila LVJ, Tanner J, Le Bell AM, Narva K, Vallittu PK.** Flexural properties of fiber reinforced root canal posts. *Dent mater* 2004; 20: 29-36.
13. **Waltimo T, Luo G, Samaranyake LP, Vallittu PK.** Glass fibre-reinforced composite laced with chlorhexidine digluconate and yeast adhesion. *J Mater Sci Mater Med* 2004; 15: 117-121.
14. **Puska MA, Närhi TO, Aho AJ, Yli-Urpo A, Vallittu PK.** Flexural properties of crosslinked and oligomer-modified glass-fibre reinforced acrylic bone cement. *J Mater Sci Mater Med* 2004; 15: 1037-43.
15. **Keski-Nikkola MS, Lassila LVJ, Vallittu PK.** An in vitro investigation of bond strength of veneering composite resin to glass fibre veil reinforced composite. *Eur J Prosthodont Res Dent* 2004; 12: 80-86.
16. **Lassila LVJ, Vallittu PK.** The effect of fiber position and polymerization condition on the flexural properties of fiber-reinforced composite. *J Cont Dent Pract* 2004; 5(15): 1-12.
17. **Tezvergil A, Lassila LVJ, Yli-Urpo A, Vallittu PK.** Repair bond strength of restorative resin composite applied to fiber-reinforced composite substrate, *Acta Odontol Scand* 2004; 62: 51-60.
18. **Alander P, Lassila LVJ, Tezvergil A, Vallittu PK.** Acoustic emission of fiber-reinforced composite in flexural testing, *Dent Mater* 2004; 20: 305-312.
19. **Vallittu PK.** Survival rates of resin-bonded, glass fiber-reinforced composite fixed partial dentures with a mean follow-up of 42 months: A pilot study. *J Prosthet Dent.* 2004; 91: 241-246.
20. **Narva KK, Lassila LV, Vallittu PK.** Fatigue resistance and stiffness of glass fiber-reinforced urethane dimethacrylate composite. *J Prosthet dent.* 2004 feb; 91(2): 158-63.
21. **Lassila LVJ, Tanner J, Le Bell AM, Narva K, Vallittu PK.** Flexural properties of fiber reinforced root canal posts. *Dent Mater* 2004; 20: 29-36.

22. **Trezvergil A, Lassila LVJ, Vallittu PK.** Strength of adhesive-bonded fiber-reinforced composites to enamel and dentin substrates. Adhesive Dent 2003; 4: 301-311.
23. **Tezvergil A, Lassila LV, Vallittu PK.** Composite-composite repair bond strength: effect of different adhesion primers. Dent Mater 2003; 19(8): 521-5.
24. **Karacaer O, Polat TN, Tezvergil A, Lassila LV, Vallittu PK.** The effect of length and concentration of glass fibers on the mechanical properties of an injection- and a compression-molded denture base polymer. J Prosthet Dent 2003; 90(4): 385-93.
25. **Ozcan M, Vallittu PK.** Effect of surface conditioning methods on the bond strength of luting cement to ceramics. Dent Mater. 2003 Dec;19(8):725-31.
26. **Närhi TO, Tanner J, Ostela I, Narva K, Nohrstrom T, Tirri T, Vallittu PK.** Anterior Z250 resin composite restorations: one-year evaluation of clinical performance. Clin Oral Investig. 2003 Sep 18 [Epub ahead of print]
27. **Le Bell AM, Tanner J, Lassila LV, Kangasniemi I, Vallittu PK.** Depth of light-initiated polymerization of glass fiber-reinforced composite in a simulated root canal. Int J Prosthodont. 2003;16(4):403-8.
28. **Vallittu PK, Kurunmaki H.** Bond strength of fibre-reinforced composite to the metal surface. J Oral Rehabil. 2003;30(9):887-92.
29. **Tezvergil A, Lassila LV, Vallittu PK.** The effect of fiber orientation on the thermal expansion coefficients of fiber-reinforced composites. Dent Mater. 2003;19(6):471-477.
30. **Tanner J, Carlen A, Soderling E, Vallittu PK.** Adsorption of parotid saliva proteins and adhesion of Streptococcus mutans ATCC 21752 to dental fiber-reinforced composites. J Biomed Mater Res. 2003;15;66B(1):391-8.
31. **Polat TN, Karacaer O, Trevergil A, Lassila LV, Vallittu PK.** Water sorption, solubility and dimensional changes of denture base polymers reinforced with short glass fibers. J. Biomater Appl. 2003;17;321-35.
32. **Rantala, L.I., Lastumäki, T.M., Peltomäki, T., Vallittu, PK.** Fatigue resistance of removable orthodontic appliance reinforced with glass fibre weave. Journal of Oral Rehabilitation 2003; 30:501-506.
33. **Lastumäki, TM, Kallio, TT, Vallittu PK.** The bond strength of light-curing composite resin to finally polymerized and aged glass fiber-reinforced composite substrate. Biomaterials 2002;23: 4533-4539.
34. **Vallittu PK.** Faserverstärkte Komposite (FRC) in der zahnärztlichen Prothetik. Deutsche Zahnärztliche Zeitschrift 57 (2002), 7; 399-405.
35. **Vallittu PK.** Use of woven glass fibres to reinforce a composite veneer. A fracture resistance and acoustic emission study. J Oral Rehabil 2002;29:423-429.

36. **Lassila LVJ, Nohrström T, Vallittu PK.** Influence of water sorption on properties of unidirectional fiber composite. *Biomater* 2002; 23; 2221-9
37. **Waltimo T, Vallittu PK, Haapasalo M.** Adherence of *Candida* species to newly polymerized and water-stored denture base polymer. *Int J Prosthodont* 2001;14:457-460.
38. **Tanner J, Vallittu PK, Söderling E.** Effect of water storage of E-glass fiber-reinforced composite on adhesion of *Streptococcus mutans*. *Biomater* 2001;22:1613-1618.
39. **Narva K, Vallittu PK, Yli-Urpo A.** Clinical survey of acrylic resin removable denture repairs with glass-fiber reinforcement. *Int J Prosthodont* 2001;14:219-224.
40. **Kallio T, Lastumäki T, Vallittu PK.** Bonding of restorative composite resin to some polymeric composite substrates. *Dent Mater* 2001;17:80-86.
41. **Lastumäki T, Lassila L, Vallittu PK.** Flexural properties of bulk fiber-reinforced composite DC-Tell used in fixed partial dentures. *Int J Prosthodont* 2001;14:22-26.
42. **Miettinen VM, Vallittu PK, Forss H.** Release of fluoride from glass fibre -reinforced composite with multiphase polymer matrix. *J Mater Mater Med* 2001;12:503-505.
43. **Lassila LVJ, Vallittu PK.** Denture base polymer Alldent Sinomer: mechanical properties, water sorption and release of residual compounds. *J Oral Rehabil* 2001;28:607-613.
44. **Vallittu PK.** A case report: A glass fibre reinforced composite resin bonded fixed partial denture. *Eur J Prosthodont Rest Dent* 2001;9:35-39.
45. **Sewón LA, Ampula L, Vallittu PK.** Rehabilitation of a periodontal patient with rapidly progressing marginal alveolar bone loss. A case report. *J Clin Periodontol* 2000; 27:615-619.
46. **Vallittu PK.** Effect of 180 weeks water storage on the flexural properties of E-glass and silica fiber acrylic resin composite. *Int J Prosthodont* 2000;13:334-339.
47. **Nohrström TJ, Vallittu PK, Yli-Urpo A.** The effect of position and quantity of glass fibers on the fracture resistance of provisional fixed partial denture. *Int J Prosthodont* 2000;13:72-78.
48. **Vallittu PK, Sevelius C.** Resin-bonded, glass fiber reinforced composite fixed partial dentures - A clinical study. *J Prosthet Dent* 2000;84:413-418.
49. **Tanner J, Vallittu PK, Söderling E.** Adherence of *Streptococcus mutans* to an E-glass fiber -reinforced composite and conventional restorative materials used in prosthetic dentistry. *J Biomed Mater Res* 2000;49:250-256.
50. **Vallittu PK.** Prosthodontic treatment with glass fiber reinforced composite resin bonded fixed partial denture. A clinical report. *J Prosthet Dent* 1999;82:132-135.

51. **Vallittu PK.** Flexural properties of acrylic polymers reinforced with unidirectional and woven glass fibers. *J Prosthet Dent* 1999;81:318-326.
52. **Vallittu PK, Ekstrand K.** In vitro cytotoxicity of fiber-polymethyl methacrylate composite used in dentures. *J Oral Rehabil* 1999;26:666-671.
53. **Vallittu PK.** Unpolymerized surface layer of autopolymerizing polymethyl methacrylate resin. *J Oral Rehabil* 1999;26:208-212.
54. **Waltimo T, Tanner J, Vallittu PK, Haapasalo M.** Adherence of *Candida albicans* to the surface of polymethylmethacrylate E glass fiber composite used in dentures. *Int J Prosthodont* 1999;12:83-86.
55. **Miettinen VM, Narva K, Vallittu PK.** Water sorption, solubility and post-curing of glass fibre reinforced polymers. *Biomater* 1999;20:1187-1194.
56. **Lassila LVJ, Vallittu PK.** Effect of water and artificial saliva on the fatigue resistance of cobalt-chromium dental alloy. *J Prosthet Dent* 1998;80:708-713.
57. **Vallittu PK, Ruyter IE, Ekstrand K.** Effect of water storage on the flexural properties of E-glass and silica fiber acrylic resin composite. *Int J Prosthodont* 1998;11:340-350.
58. **Vallittu PK.** The effect of glass fiber reinforcement on the fracture resistance of a provisional fixed partial denture. *J Prosthet Dent* 1998;79:125-130.
59. **Vallittu PK.** Compositional and weave pattern analyses of glass fibers in dental polymer fiber composites. *J Prosthodont* 1998;7:170-176.
60. **Vallittu PK.** Some aspects of the tensile strength of unidirectional glass fiber - polymethyl methacrylate composite used in dentures. *J Oral Rehabil* 1998;25:100-105.
61. **Vallittu PK, Narva K.** Impact strength of a modified continuous glass fiber-polymethylmethacrylate composite. *Int J Prosthodont* 1997;10:142-148.
62. **Vallittu PK.** Oxygen inhibition of autopolymerization of polymethylmethacrylate - glass fibre composite. *J Mater Sci Mater Med* 1997;8:489-492.
63. **Vallittu PK.** Glass fiber reinforcement in repaired acrylic resin removable dentures: Preliminary results of a clinical study. *Quintessence Int* 1997;28:39-44.
64. **Vallittu PK.** Transverse strength, ductility, and qualitative elemental analysis of cobalt-chromium alloy after various durations of induction melting. *J Prosthodont* 1997;6:55-60.
65. **Vallittu PK.** Curing of silane coupling agent and its effect on the transverse strength of autopolymerizing polymethylmethacrylate-glass fibre composite. *J Oral Rehabil* 1997;24:124-130.
66. **Vallittu PK.** Ultra-high-modulus polyethylene ribbon as reinforcement for denture polymethyl methacrylate: A Short communication. *Dent Mater* 1997;13:381-382.

67. **Miettinen VM, Vallittu PK.** Water sorption and solubility of glass fiber reinforced denture polymethyl methacrylate resin. *J Prosthet Dent* 1997;77:531-534.
68. **Miettinen VM, Vallittu PK.** Release of residual methyl methacrylate into water from glass fiber - polymethyl methacrylate composite used in dentures. *Biomater* 1997;18:181-185.
69. **Vallittu PK.** Some factors affecting the transverse strength of repaired denture acrylic resin. *Eur J Prosthodont Rest Dent* 1996;4(1):7-9.
70. **Vallittu PK.** Dimensional accuracy and stability polymethylmethacrylate reinforced with metal wire or with continuous glass fiber. *J Prosthet Dent* 1996;75:617-621.
71. **Vallittu PK.** Fatigue resistance and stress of wrought-steel wire clasps. *J Prosthodont* 1996;5:186-192.
72. **Vallittu PK.** Comparison of the in vitro fatigue resistance of acrylic resin partial denture reinforced with continuous glass fibers or metal wire. *J Prosthodont* 1996;5:115-121.
73. **Vallittu PK.** Impregnation of glass fibres with polymethylmethacrylate by using a powder coating method. *Applied Composite Materials* 1995;2:51-58.
74. **Vallittu PK, Kokkonen M.** Deflection fatigue of a cobalt-chromium, titanium and gold alloy cast denture clasp. *J Prosthet Dent* 1995;74:412-419.
75. **Vallittu PK, Vojtkova H, Lassila VP.** Impact strength of denture polymethyl methacrylate reinforced with continuous glass fibers or metal wire. *Acta Odontol Scand* 1995;53:392-396.
76. **Vallittu PK.** The effect of void space and polymerization time on transverse strength of acrylic - glass fibre composite. *J Oral Rehabil* 1995;22:257-261.
77. **Vallittu PK, Lassila VP, Lappalainen R.** Transverse strength and fatigue of denture acrylic-glass fiber composite. *Dent Mater* 1994;10:116-121.
78. **Vallittu PK, Lassila VP, Lappalainen R.** Acrylic resin - fiber composite - Part I: The effect of fiber concentration on fracture resistance. *J Prosthet Dent* 1994;71:607-612.
79. **Vallittu PK.** Acrylic resin-fiber composite - Part II: the effect of polymerization shrinkage of polymethyl methacrylate applied to fiber roving on the transverse strength. *J Prosthet Dent* 1994;71:613-617.
80. **Vallittu PK, Lassila VP, Lappalainen R.** Evaluation of damage to removable dentures in two cities in Finland. *Acta Odontol Scand* 1993;51:363-369.
81. **Vallittu PK.** Comparison of two different silane compounds used for improving adhesion between fibers and acrylic denture base material. *J Oral Rehabil* 1993;20:533-539.

82. **Vallittu PK.** Effect of some properties of metal strengtheners on the fracture resistance of acrylic denture base material construction. *J Oral Rehabil* 1993;20:241-248.
83. **Vallittu PK, Lassila VP.** Effect of metal strengthener's surface roughness on fracture resistance of acrylic denture base material. *J Oral Rehabil* 1992;19:385-391.
84. **Vallittu PK, Lassila VP.** Reinforcement of acrylic resin denture base material with metal or fibre strengtheners. *J Oral Rehabil* 1992;19:225-230.