

DAFTAR PUSTAKA

- Abdassah, M., (2017). Nanopartikel Dengan Gelasi Ionik. *Jurnal Farmaka*. 15(1): 45–52.
- Abdullah, Z.S., (2015) The Effect of Addition of Hydroxyapatite Microscopic Fillers on Surface Roughness and Some Mechanical Properties of Heat-Cured Acrylic Resin. *Journal of Baghdad College of Dentistry*, 27(3):50–54. doi:10.12816/0015034.
- Adhanti, R. (2013). Konsentrasi Efektif Ekstrak Daun Tembakau (*Nicotiana tabacum*) Sebagai Pembersih Gigi Tiruan Resin Akrilik Terhadap Jumlah *Streptococcus mutans*. Universitas Jember
- Afrizal dan Gunawarman, (2016) Analisa Struktur Mikro Material Substitusi Hidroksiapatit Cangkang Kerang Darah dan Resin Akrilik Bahan Pembuat Gigi untuk Aplikasi Gigi Tiruan. *Jurnal Surya Teknika*. 2(04): 1–9. <https://doi.org/10.37859/jst.v2i04.17>.
- Ahmed, E.S., dan Oudah, L.M., (2024) Acrylic Resin Denture Base Material Enhancement by Fiber, Filler, and Nano Filler Addition: A Systematic Review. *Tikrit Journal for Dental Sciences*. 12(1): 11–20.
- Akbar, A.F., dan Cahyaningrum, S.E., (2021) Characterization and Anti-Bacterial Testing of Nano Hydroxyapatite Clove (*Eugenia Caryophyllus*) Against *Streptococcus Mutans* Bacteria. *Indonesia Journal of Chemical Science*.
- Al-Kheraif, A.A.A., (2014) The effect of mechanical and chemical polishing techniques on the surface roughness of heat-polymerized and visible light-polymerized acrylic denture base resins. *Saudi Dental Journal*. 26(2): 56–62. <https://doi.org/10.1016/j.sdentj.2013.12.007>.
- Al-Muthaffer, azad M.R dan Shatha S. Al-Ameer. (2012). Effect of Thermocycling on Some Mechanical Properties of Polymide Hypoallergenic Denture Base Material (Comparative Study). *J Bagh College Dentistry* 24(2).
- Alqutaibi, A.Y., Baik, A., Almuzaini, S.A., Farghal, A.E., Alnazzawi, A.A., Borzangy, S., Aboalrejal, A.N. (2023) Polymeric Denture Base Materials:AReview.Polymer15(15).
- Al-Waily, M., Hussein, E.Q., Alsaffar, I., and Al Shammari, M.A., (2019). *Life enhancement of partial removable denture made by biomaterials reinforced by graphene nanoplates and hydroxyapatite with the aid of artificial neural network*.

- Anggraini, A, I. (2015). *Kepuasan Pasien Terhadap Pelayanan Kesehatan Gigi Dan Mulut Di Poliklinik Gigi Dan Mulut RSUD Tenriawan Kabupaten Bone*. Skripsi. Universitas Hasanudin, Makasar.
- Anusavice, K.J., Shen, C., dan Rawls, R.H., (2021) *Phillips' Science of Dental Materials*. 12th edn. St.Louis, Missouri: Elsevier.
- Asar, N. V., et al. (2012). *Influence of different nano-particles on mechanical properties of heat-polymerized acrylic resins*. *Journal of Prosthodontics*, 21(7), 543–550.
- Assyarifah, S., (2021) *Pengaruh penambahan nanohidroksiapatit tulang sapi terhadap kekerasan model gigi berbahan dasar self cured acrylic sebagai media pembelajaran keterampilan klinis prostodonsia*. Universitas brawijaya <http://repository.ub.ac.id/id/eprint/191554/>.
- Balqies, Dewi, S.U., Dahlan, K. (2011) Sintesis Dan Karakterisasi Hidroksiapatit Menggunakan Analisis X-RAY Diffraction. Prosiding Seminar Nasional Hamburan Neutron dan Sinar -X ke 8. ISSN : 1410-7648. Serpong.
- Barunawati, S.B., (2020) *Pengaruh Penggunaan Gel Abalon Pasca Preparasi Gigi Tiruan Cekat Terhadap Penutupan Tubuli Dentinalis (Kajian in vitro dan in vivo pada tikus Ratus norvegicus)*. Yogyakarta : Disertasi Universitas Gajah Mada.
- Broitman, E. (2017). Indentation hardness measurements at macro-, micro-, and nanoscale: a critical overview. *Tribology Letters*, 65(1), 23.
- Burve, R., Loeschner, K., Lund, Y.O., Kiebach, W.R., dan Grivel, J.C., (2024) Scalable Synthesis of Size-Tunable Hydroxyapatite Nanoparticles as Potential Nanofertilizers. *ACS Applied Nano Materials*. 7(8): 8537–8546. <https://doi.org/10.1021/acsanm.3c04713>.
- Badan Kebijakan Pembangunan Kesehatan., (2023) *Survei Kesehatan Indonesia 2023*. Jakarta: Kementerian Kesehatan Republik Indonesia. Available at: <https://www.badankebijakan.kemkes.go.id/ski-2023-dalam-angka/>.
- Cakmak, G., Hess, J.A., Donmez, M.B., Yilmaz, D., Alhotan, A., Schimmel, M., Peutzfeldt, A. (2023) Effect of polishing and denture cleansers on the surface roughness of new-generation denture base materials and their color change after cleansing. *Journal of Prosthodontics*. May:1–8. <https://doi.org/10.1111/jopr.13755>.
- Carolia N, Noventi W. (2016) *Potensi Ekstrak Daun Sirih Hijau (Piper betle L.) sebagai Alternatif Terapi Acne vulgaris*. *Studi Pendidikan Dokter, Fak Kedokteran, Univ Lampung*.5(1):140.

- Chairunnisa, Sofia, P. A., & Novita, C. E. (2017) Gambaran Tingkat Pengetahuan Masyarakat Tentang Kehilangan Gigi dan Pemakaian gigi tiruan Di Kecamatan Jaya Baru Banda Aceh. *Journal Caninus Dentistry*, 2(4), 142-149.
- Cursaru, L.M., Lota, M., Piticescu, R.M., Tarnita, D., Savu, S.V., Savu, L.D., Dumitrescu, G. (2022) Hydroxyapatite from Natural Sources for Medical Applications. *Materials*. 15(15).
- Doldberg, M., V, Smirnov., O, Antonova., A, Konovalov., A, Fomina., V, S Komlev., S, Barinov., A, Rodionov., M, Gavurov., & S, Orlinskii. (2018). Synthesis and Study of the Synthetic Hydroxyapatite Doped with Aluminium. *IOP.Conf.Series: Earth and Environmental Science*. 155.
- Duymus, Zeynep Yesil, et al. Evaluation the Vickers hardness of denture base materials. *Open journal of stomatology*, 2016, 6.4: 114-119.
- Ge X., Ren C., Lu X., Li Z., Chen G., Wang K., Ren F., Wang Q., Wang M., An X., Qian B. (2019) Surfactant-free electrochemical synthesis of fluoridated hydroxyapatite nanorods for biomedical applications, *Ceramics International*. 45(14), 17336-17343.
- Gherald, M., Yelmida A., Evelyn., 2019, Pengaruh pH Terhadap Bentuk Partikel Hidroksiapatit dari Precipitated Calcium Carbonat (PCC) Kulit Telur Itik Melalui Metode Peresipitasi, *JOM FTEKNIK*, Vol.6 (1), p.3.
- Hadijah, (2017) *Mengenal Abalon Tropis Biologi dan Ekologi*. Makasar: CV Sah Media.
- Hartati, E., Setiawan, D., dan Yuliyati, Y.B., (2014) Sintesis Dan Karakterisasi Hidroksiapatit (Hap) Untuk Bahan Pengikat Tungstat Dalam Sistem Generator 188W/188Re. *Jurnal Sains dan Teknologi Nuklir Indonesia Indonesian Journal of Nuclear Science and Technolog*. 15(2): 55-68.
- Hassan, Z., Hatim, N. and Taqa, A., (2011). Study the FTIR of hydroxyapatite additive to polimerisasi panas acrylic resin. *Al-Rafidain Dental Journal*, 14(1):32–36. doi:10.33899/rden.2014.89250.
- Hasiuk, P., Kindiy, D., Radchuk, V., Kindiy, V., Demkovich, A., dan Yarkoviy, V., (2022) Biological compatibility of metal structures of dentures made from multiple melted alloys. *Polski Merkuriusz Lekarski*. 50(296): 114–117.

- Karadi, H.R. and Hussein, B.M.A., (2017) Effect of modified nanohydroxyapatite fillers addition on some properties of heat-cured acrylic denture base materials. *Journal of Baghdad College of Dentistry*, 29(2):49–54.
- Kementrian Kesehatan RI. (2018) *Hasil Riset Kesehatan Dasar (Riskesdas) 2018*. Jakarta: Badan Penelitian dan pengembangan Kesehatan Kementrian RI.
- Komariah dan Sjam, R., (2012) Kolonisasi *Candida* Dalam Rongga Mulut. *Majalah Kedokteran UKI*, 28(1): 39–47.
- Kostic, M., Igic, M., Gligorijevic, N., Nikolic, V., Stosic, N., dan Nikolic, L., (2022) The Use of Acrylate Polymers in Dentistry. *Polymers*. 14(21): 1–15. <https://doi.org/10.3390/polym14214511>.
- Kumar, K. V., Subha, T. J., Ahila, K. G., Ravindran, B., Chang, S. W., Mahmoud, A. H., ... & Rathi, M. A. (2021). Spectral characterization of hydroxyapatite extracted from Black Sumatra and Fighting cock bone samples: A comparative analysis. *Saudi journal of biological sciences*, 28(1), 840-846.
- Kusumawardani, C.D.N., Chondro, R.T., Andriani, I., dan Sari, R.P., (2020) Pengaruh penambahan hidroksiapatit terhadap porositas dan compressive strength basis resin akrilik heat-cured. *Jurnal Kedokteran Gigi Universitas Padjadjaran*. 32(2): 91.
- Laonapakul, T. (2015) Synthesis of hydroxyapatite from biogenic wastes. *Engineering and Applied Science Research*, 42(3), 269-275.
- Lawarti, Riska & Cahyaningrum, Sari. (2022) Potential Antibacterial Activity of Hydroxyapatite Composite And Green Betel Leaf Extract (*Piper betle* L.) Against *Streptococcus mutans* Bacteria. *Indonesian Journal of Chemical Science*. 11. 41-49. 10.15294/ijcs.v11i1.51059.
- Lugo, V.R., Karthik, T.V.K., Anaya, D.M., Rosas, E.R., Ceron, L.S.V., Valderrama, M.I.R., dan Rodriguez, E.S., (2018) Wet chemical synthesis of nanocrystalline hydroxyapatite flakes: Effect of pH and sintering temperature on structural and morphological properties. *Royal Society Open Science*. 5(8).
- Mamat, N.S., Esa, Y., Wong, N.L.W., Nor, S.A.M., Kadar, N.A., Sigwart, J.D., dan Arshad, A., (2023) The complete mitogenome of *Haliotis asinina* (Gastropoda, Haliotidae) from Malaysian waters provides further insights into the phylogeny of the abalone. *New Zealand Journal of Marine and Freshwater Research*. 1–9.
- Manafi, A. M. dan S. Joughehdoust. (2009). “Synthesis of Hydroxyapatite Nanostructure by Hydrothermal Condition for Biomedical Application”. *Iranian Journal of Pharmaceutechal Science*. Vol. 5(2): 89-94.

- Manappallil, J.J., (2016) *Basic Dental Materials*. 4th edn. New Delhi: Jaypee Brothers Medical Publishers.
- McCabe, J. dan Walls, A.W.G., (2013) *Applied dental materials*. 9th edn. London: Blackwell Publishing Ltd. Available at: [https://doi.org/10.1016/0022-3913\(73\)90127-3](https://doi.org/10.1016/0022-3913(73)90127-3).
- Mollazadeh, S., Javadpour, J., dan Khavandi, A., (2007) In situ synthesis and characterization of nano-size hydroxyapatite in poly(vinyl alcohol) matrix. *Ceramics International*, 33(8):1579–1583. <https://doi.org/10.1016/j.ceramint.2006.06.006>.
- Mondal, S., Park, S., Choi, J., Vu, T.T.H., Doan, V.H.M., Vo, T.T., Lee, B. (2023) Hydroxyapatite: A journey from biomaterials to advanced functional materials. *Advances in Colloid and Interface Science*. 321: 103013. <https://doi.org/10.1016/j.cis.2023.103013>.
- Mowade H. (2014) The effect of polypropilene fibers in different lengths on some properties of heat-cured acrylic resin processed by autoclave. *MDJ*;11(1): 57-61.
- Muntamah.,(2011) *Sintesis dan Karakterisasi Hidroksiapatit dari Limbah Cangkang Kerang Darah (*Anadara granosa* sp)*. Institut Pertanian Bogor, Bogor, Indonesia
- Muri., A.Y., (2014) *Metode Penelitian Kuantitatif, Kualitatif dan Penelitian Gabungan*. Jakarta: Kencana.
- Nallaswamy, D., (2003) *Textbook of Prosthodontics*. New Delhi: Jaypee Brothers, Medical Publishers: 266-267.
- Naini, A., (2011) Pengaruh Berbagai Minuman Terhadap Stabilitas Warna Resin Akrilik. *Stomatonic (J.K.G Unej)*.
- Nirwana,I., (2005) Kekuatan Transversa Resin Akrilik Hybrid Setelah Penambahan Glass Fiber Dengan Metode Berbeda. *J Dent*, 38(1):16-19.
- Nugraha, Adi Widya (2008) *Streptococcus mutans, Si Plak Dimana-mana*. Fakultas Farmasi, Universitas Sanata Dharma, Yogyakarta.
- Nurjanah, Zulhamsyah, Kustiariyah. (2005). Kandungan Mineral dan Proksimat Kerang Darah (*Anadara granosa*) Yang Diambil Dari Kabupaten Boaleo, Gorontalo. *Jurnal Perikanan dan Kelautan*. 13: 15-24.
- Palanivelu, R. A., Mary, S. dan Ruban, K. (2014) Nanocrystalline Hydroxyapatite Prepared Under Various PH Conditions. *Journal Molecular and Biomolecular Spectroscopy*. 131 (2014) : 37±41.

- Pangesti, R. D., Cahyono, D. dan Kusumo, E. (2017) Perbandingan Daya Antibakteri ekstrak dan minyak *Piper betle* L terhadap bakteri *Streptococcus mutans*. *Indonesian Journal of Chemical Science* 6(3): 271-178.
- Park, J., et al., (2006), *Biomaterials an Introduction*, 3rd Edition, Springer, New York.
- Pepla, E., Besharat, L.K., Palaia, G., Tenore, G., & Migliaiu, G., (2014). Nano-hydroxyapatite and its applications in preventive, restorative and regenerative dentistry: a review of literature. *Ann Stomatol (Roma)*, 5(3):108-114. PMID: 25506416; PMCID: PMC4252862.
- Permatasari, H.A., Sari, M., Aminatun, Suciati, T., Dahlan, K., dan Yusuf, Y., (2021) Nano-carbonated hydroxyapatite precipitation from abalone shell (*Haliotis asinina*) waste as the bioceramics candidate for bone tissue engineering. *Nanomaterials and Nanotechnology*. 11: 1–9.
- Prabaningtyas, R.A.J. M.S., (2015) *Karakterisasi hidroksiapatit dari Kalsit sebagai bone graft sintesis menggunakan X-ray diffractometer (XRD) dan Fourier transform infrared (FTIR)*. Skripsi. Universitas Jember.
- Prashanti, E., et al. (2020). *Effect of nano-hydroxyapatite on mechanical properties of PMMA*. *Journal of Prosthodontics*, 29(3), 250–256.
- Powers, J.M. Wataha, J.C., (2008) *Dental Materials Foundation and Applications*, 11th ed. St. Louis, Missouri: Elsevier,:171.
- Powers, J.M. & Sakaguchi, R.M., (2018). *Craig's Restorative Dental Materials*, 13th ed. Philadelphia: Elsevier Mosby,:2, 143.
- Purba, R. A. P., Restianingsih, T., Anggraini, R. M., Fendriani, Y., & Deswardani, F. (2024). Ekstraksi dan Karakterisasi Hidroksiapatit (HAp) dari Tulang Ikan Tenggiri (*Scomberomorus commersoni*) dengan Metode Heat Treatment. *Jurnal Fisika Unand*, 13(2), 247-253.
- Putra, M.G.E., Yelmida A., dan Evelyn, (2019). Pengaruh Suhu Dan pH Terhadap Bentuk Partikel Hidroksiapatit Dari Precipitated Calcium Carbonate (PCC) Kulit Telur Itik Melalui Metode Presipitasi. *Jom Fteknik*. 6: 1– 8.
- Putranti, D.T., dan Angelica, A., (2024) Pengaruh Penambahan Nano Hidroksiapatit Cangkang Kerang Kepah Pada Bahan Basis Gigi Tiruan Resin Akrilik Polimerisasi Panas Terhadap Kekuatan Transversal: Eksperimental Laboratoris. *Jurnal Kedokteran Gigi*
- Universitas Padjadjaran. 36(1):28–37. <https://doi.org/10.24198/jkg.v36i1.51113>.
- Putri HM, Herijulianti E, Nurjanah N., (2014) *Ilmu Pencegahan Penyakit Jaringan Keras dan Jaringan Pendukung Gigi*. Jakarta: PT Buku Kedokteran EG.

- Qulub, F., Widiyanti, P., dan Janady, D., (2015) Variasi Komposisi Nano Hidroksiapatit Pada Poly (1,8-Octanediol-Co-Citrate) (Poc) Sebagai Biodegradable Bone Screw. *Jurnal Sains Materi Indonesia*. 16(4): 188–192.
- Riyani, E., (2005) *Karakterisasi Senyawa Kalsium Fosfat Karbonat Hasil Presipitasi Menggunakan XRD, SEM, dan EDXA Pengaruh Perubahan Ion F dan Mg*, Skripsi, Jurusan Fisika Fakultas Matematika dan Ilmu Pengetahuan Alam Institut Pertanian Bogor, Bogor.
- Rocha, J.H.G., Lemos, A.F., Agathopoulos, S., Valério, P., Kannan, S., Oktar, F.N., Ferreira, J.M.F., (2005) Scaffolds for Bone Restoration from Cuttlefish, Elsevier : Bone 37.
- Rosdiana, N., dan Nasution, I.A., (2016) Gambaran Daya Hambat Minyak Kelapa Murni dan Minyak Kayu Putih Dalam Menghambat Pertumbuhan *Streptococcus mutans*. *Syiah Kuala Dent Soc*, 2016, 1(1): 43 - 50
- Rujitanapanich, S., Kumpapan, P., dan Wanjanoi, P., (2014) Synthesis of hydroxyapatite from oyster shell via precipitation. *Energy Procedia*. 112–117. <https://doi.org/10.1016/j.egypro.2014.07.138>.
- Saputra, Rio, et al. (2018) "Sintesis ZSM-5 Menggunakan Silika Presipitasi dari Fly Ash Pabrik CPO." *Jurnal Online Mahasiswa Fakultas Teknik Universitas Riau*, vol. 5, no. 1, pp. 1-3.
- Sari, M., dan Yusuf, Y., (2018) Synthesis and characterization of hydroxyapatite based on green mussel shells (*Perna viridis*) with calcination temperature variation using the precipitation method. *International Journal of Nanoelectronics and Materials*. 11(3): 357–370.
- Sari, Mona, et al. Development of a hydroxyapatite nanoparticle-based gel for enamel remineralization—A physicochemical properties and cell viability assay analysis. *Dental Materials Journal*, 2022, 41.1: 68-77.
- Sarikaya M, Gunnison KE, Yasrebi M, et al. Mechanical Property-Microstructural Relationships in Abalone Shell. *MRS Proc*; 174. *Epub ahead of print* 1989. DOI: 10.1557/proc-174-109.
- Sasikumar, S., dan Vijayaraghavan, R., (2006) Low temperature synthesis of nanocrystalline hydroxyapatite from egg shells by combustion method. *Trends in Biomaterials and Artificial Organs*. 19(2): 70–73.
- Sarikaya M, Gunnison KE, Yasrebi M, et al. Mechanical Property-Microstructural Relationships in Abalone Shell. *MRS Proc*; 174. *Epub ahead of print* 1989. DOI: 10.1557/proc-174-109. Setyono, D.E.D., (2022) Abalon: Teknologi Pembesaran. CV Budi Utama

- Setyono, D.E.D (2009). *Abalon: Biologi dan Reproduksi*. Jakarta: LIPI Press,p.92
- Sharma, D., dan Sharma, N., (2015) Denture Stomatitis—A Review. *International Journal of Oral Care and Research*. 3(2): 81–85.
- Suchanek, W., et al., (2000) Processing and Properties of Hydroxyapatite-Based Biomaterials of Use as Hard Tissue Replacement Implants, *Journal of Materials Research*, 13: 94-117.
- Suryadi., (2011) *Sintesis dan karakterisasi biomaterial hidroksiapatit dengan proses pengendapan kimia basah*. Tesis Fakultas Teknik Universitas Indonesia: Depok.
- Suryani, E., (2021) Uji Efektivitas Ekstrak Biji Kakao (*Theobroma Cacao L.*) Sebagai Antibakteri Dalam Berbagai Konsentrasi pada *Streptococcus Pyogenes*.Majalah Kedokteran UKI. 36.8-13.
- Itohang, F., Azis, Y., dan Zultinia, (2016) Sintesis Hidroksiapatit dari Precipitated Calcium Carbonate (PCC) Kulit Telur Ayam Ras Melalui Metode Hidrotermal. *Jom Fteknik*. 3(2).
- Sriprapha, P., Eitssayeam, S., Intatha, U., Tunkasiri, T., Rujinagul, G., dan Pengpat, K., (2011) Preparation of Hydroxyapatite Nanoparticles with Various Shapes. *Society*. 4(2): 120–122.
- Suwignyo. (2005) *Avertebrata Air Jilid 1*. Penebar Swadaya.
- Szturner, P., dan Biernat, M., (2022) The Synthesis of Hydroxyapatite by Hydrothermal Process with Calcium Lactate Pentahydrate: The Effect of Reagent Concentrations, pH, Temperature, and Pressure. *Bioinorganic Chemistry and Applications*,(1).
- Todar K. (2012). *Streptococcus pyogenes and Streptococcal Disease*. Kenneth's Online Textbook of Bacteriology
URL:<http://textbookofbacteriology.net/streptococcus.html>.
- Van Noort, R. (2006). *Introduction of Dental Materials* (2nd ed). China : Mosby. rd
- Vural, C., Ozdemir, G., Kurtulmus, H., Kumbuloglu, O., dan Ozcan, M., (2010) Comparative effects of two different artificial body fluids on candida albicans adhesion to soft lining materials. *Dental Materials Journal*. 29(2): 206–212.
<https://doi.org/10.4012/dmj.2009-081>.
- Wadu, I., H, Soetjipto., & M, N Cahyanti. (2017) Karakterisasi dan Uji Aktivitas Antibakteri Hidroksiapatit (HAp) dari Kerabang Telur Ayam Terhadap Bakteri *Lactobacillus acidophilus*. *JKPK UNS*. Vol 3 (2).

- Wahyuni, D.,(2003) Penelitian pembuatan Poli Metil Metakrilat (PMMA). *JURNAL Teknologi Dirgantara*, 1(2).
- Wijanarko, A.B., dan Irfa'I, M.A., (2023) 'Studi Temperatur Hidrotermal Pada Sintesis Hidroksiapatit Yang Berasal Dari Tulang Sapi Untuk Aplikasi Biomaterial. *Jtm*. 12(01):1–6.
- Winarno, S.,(2021) Preliminary Study on Hand-cast Lightweight Concrete Block using Raw Rice Husk as Aggregate. *IOP Conf. Ser.: Earth Environ. Sci.*:933. DOI: 10.1088/1755-1315/933/1/012005.
- Yumas, Medan. (2017) Pemanfaatan Limbah Kulit Ari Biji Kakao (*Theobroma cacao* L) Sebagai Sumber Antibakteri *Streptococcus mutans*. (Utilization of Cocoa Beans Epidermis Waste (*Theobroma cacao* L) as Antibacterial *Streptococcus mutans*). *Jurnal Industri Hasil Perkebunan*. 12. 7. 10.33104/jihp.v12i2.2764
- Yusuf, Y., dkk., (2019) *Hidroksiapatit Berbahan Dasar Biogenik*. Yogyakarta: Gadjah Mada University Press.
- Zarb, G., Hobkirk, J., Eckert, S., & Jacob, R., (2025) *Prosthetic Treatment for Edentulous Patients: Complete Dentures and Implant-Supported Prostheses*, 13th ed. St. Louis: Mosby, :121-160.
- Zelnicek, Tailor. (2014) *Streptococcus mutans- Tooth Decay*. Microbiology in Arezzo. Univ.Of Oklahoma. Italy.