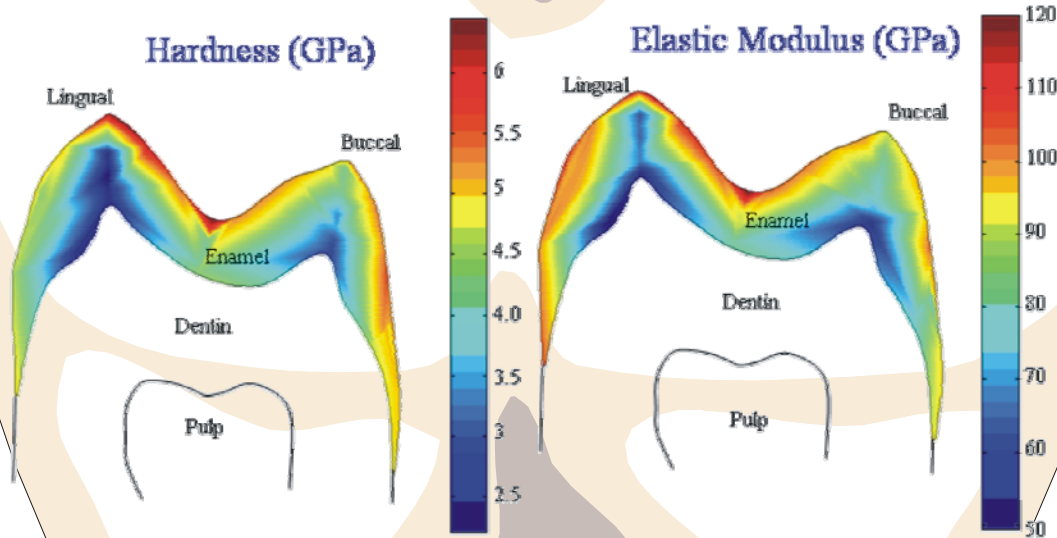
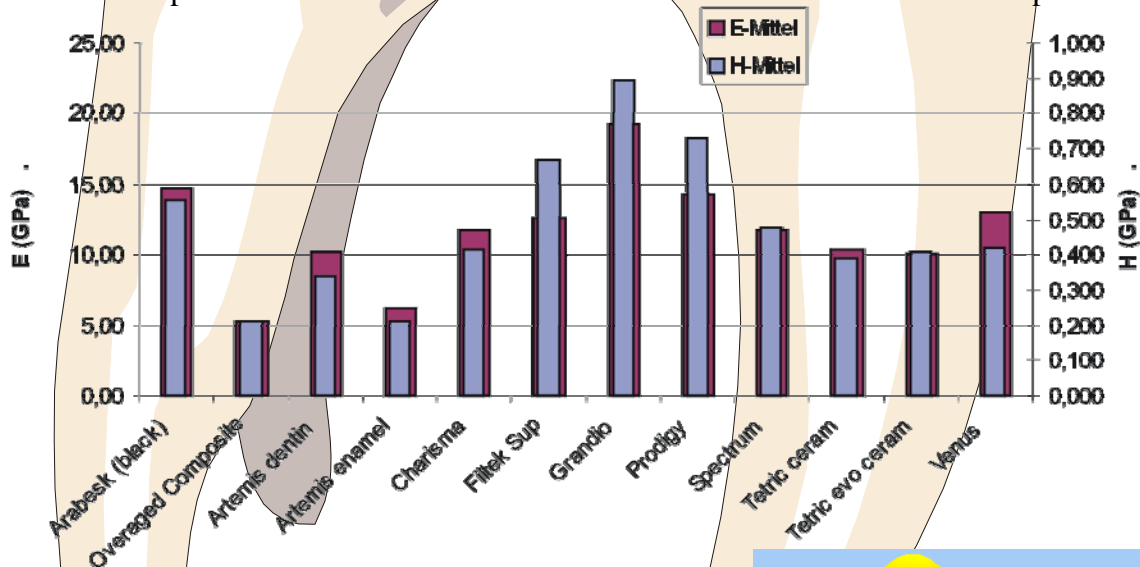


Example No. 7: Contact Mechanics in Dentistry

For very obvious reasons, there is no better example of applied contact mechanics in human biology and medical care than our teeth and everything in the field of dentistry. Not only have our teeth an average live time usually much shorter than the rest of the body, it also happens, that our habits of treating our teeth not entirely fit their demands. Here we are not only talking about proper tooth brushing but also about the food we give them to chew. So, almost all of us already have or will have fillings rather soon and we should all be interested in how good they are and how to make them better and longer lasting.



We start by analysing of the human teeth material properties in order to find the perfect replacement, meaning its structure and material composition. Here SIO analysing procedures and software can dramatically extend “classical” methods. So, it is for example possible to extract the complete stress field in the moment of maximum load of indentation experiments.



Finally SIO optimisation procedures can be applied in order to find weak points and the crucial physical parameters for even better filling materials and structures by clearly identifying the physical effects responsible for certain failure mechanisms.

