

Seminar Abstract
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Tribology, dental sciences, nature and art – A joyful journey through kindred worlds

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Chitons are animals that paint wonderful images with the magnetic wear particles of their crystalline teeth. Such pieces of art combine beauty and expediency: If the animal had enough to eat, it uses its magnetic sense and navigates home along the wear traces. Combinations of materials, structures and beauty are omnipresent in living nature. Scientifically and artistically inspiring, the exquisite beauty of living nature unites extraordinary beauty with optimized functionality. Examples of grinders and cutters from nature, technology and art, which range from smallest microelectromechanical machines with monomolecular lubricant layers to adhesive pads of frogs, who easily climb jungle giants, to the tribology of dune sand and the resulting optically appealing patterns, allow for a fresh look on interacting surfaces in relative motion, their friction, adhesion, lubrications and wear – and what we can learn from them for new approaches in tribology and the dental sciences, environmentally friendly, sustainable – and beautiful!

Ille C. Gebeshuber, physicist from Vienna, Austria, has been living and working in tropical Malaysia for six years. In her science she appreciates inspiration from living nature. Tribological scientific journeys bring her and her students into different and yet kindred worlds. On biomimetic jungle expeditions in Costa Rica (with aircraft engineers from Boeing), India (with Mechanical Engineering professors from the Indian Institute of Science, the best teaching and research institution of this 1.2 billion people country), New Zealand (with Maoris, CEOs und scientists), Austria (with 7-9 year olds from the children university Steyr) and in the deep rainforest of Borneo (with biologists, artists and engineers) she reveals the inspirational potential of materials, structures and processes of animated nature for disruptive, new approaches in science and technology.