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Abstract: **From Actuators to guidewires: How we arrived in the Medical NiTinol market with a detour to the niche "Automotive Industry"**

For most people, "Nitinol" is equal to pseudoelastic, Ni-rich and binary NiTi products for medical application. When we started Ingpuls in 2009, we steered clear of that market for two reasons: 1. There were already solutions (materials) and the companies to provide them. 2. We were developing actuator prototypes and found out that the existing actuator materials just did not meet our and our clients requirements. In the medical field, the main requirement is relatively easy, because the working environment for all implants has the same temperature: 37˚C in a healthy human body. For actuators, it's not that easy: Just in a car alone there are at least 5 different temperature regimes for different actuation tasks. Interior, thermomanagement, gasoline, oil, etc.. Since we had always made our own alloys during our research activities, it seemed the logical step to start with customized alloys for all the applications out there. A few years and a few million cars equipped with our actuator springs later, we decided to give the medical material a try.

Author's Biography: **Burkhard Maass, Ingpuls GmbH**
Birthday: August 22, 1981
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- Co-Founder and CEO/CTO of Ingpuls GmbH since 2009
- PhD in Materials Science at Ruhr University Bochum in 2012, at Gunther Eggeler's chair, in the group of Jan Frenzel, topic: Alloy customization and development of pseudoelastic NiTiCu-based SMA
- Assistant/honorary teacher of "Shape Memory Alloys" for undergraduate Students at the Ruhr University Bochum
- CEO of Ingpuls Smart Shadings GmbH since 2021
- Managing Director of Ingpuls Medical since 2022