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Our research centre of excellence 'IDUN' covers activities in nanosensors and microfabricated devices for oral drug delivery. This allows us to explore the synergy between sensor development and search for new pharmaceutical characterization/delivery tools and materials. I will show examples of recent findings and results within drug/polymer characterization, microdevices for drug delivery [1, 2] and diagnostics. Also, new applications within therapeutic drug monitoring using Surface Enhanced Raman Scattering [3, 4] will be presented as well as centrifugal microfluidics platforms for cell growth [5].

### References

- [1] Tijana Maric et al., *Small*, 19 (2023) 2206330
- [2] Mahdi Ghavami, et al., *Journal of Controlled Release*, 361 (2023) 40
- [3] Gohar Soufi et al., *Biosensors and Bioelectronics: X*, 14 (2023) 100382
- [4] Yaman Goksel et al., *ACS Sensors*, 7 (2022) 2358
- [5] Laura Seriola et al., *Lab on a Chip*, 23 (2023) 1603



**Figure 1:** Example of microdevice for oral drug delivery. This is a self-unfolding foil that aligns to the intestinal wall (rat or pig). Hereby, we have, among others, achieved oral delivery of insulin [2]