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## Employment

### **Graz University of Technology**

Institute of Materials Science, Joining and Forming (3030)  
Graz University of Technology (90000)  
Graz, Austria  
1 Apr 2020 → present

### **Graz University of Technology**

Working Group Lightweight and Forming Technologies (3031)  
Graz University of Technology (90000)  
Graz, Austria  
1 Apr 2020 → present

## Research outputs

### **The role of hydrogen diffusion, trapping and desorption in dual phase steels**

Drexler, A., Helic, B., Silvayeh, Z., Mraczek, K., Sommitsch, C. & Domitner, J., Feb 2022, In: Journal of Materials Science. 57, 7, p. 4789–4805 17 p.

### **Influence of Plastic Deformation on the Hydrogen Embrittlement Susceptibility of Dual Phase Steels**

Drexler, A., Helic, B., Silvayeh, Z., Sommitsch, C., Mraczek, K. & Domitner, J., 2022, In: Key Engineering Materials. 926, p. 2077-2091 15 p.

### **Viscoplastic Self-Consistent (VPSC) Modeling for Predicting the Deformation Behavior of Commercial EN AW-7075-T651 Aluminum Alloy**

Domitner, J., Buzolin, R. H., Patil, S., Auer, P., Papenberg, N., Kabliman, E., Silvayeh, Z., Drexler, A. & Grabner, F., 2022, In: Key Engineering Materials. 926, p. 2109-2118 10 p.

### **Critical verification of the Kissinger theory to evaluate thermal desorption spectra**

Drexler, A., Vandewalle, L., Depover, T., Verbeken, K. & Domitner, J., 16 Nov 2021, In: International Journal of Hydrogen Energy. 46, 79, p. 39590-39606 17 p.

### **Hydrogen segregation near a crack tip in nickel**

Drexler, A., He, S., Pippan, R., Romaner, L., Razumovskiy, V. I. & Ecker, W., 15 Mar 2021, In: Scripta Materialia. 194, 113697.

### **Local hydrogen accumulation after cold forming and heat treatment in punched advanced high strength steel sheets**

Drexler, A., Bergmann, C., Manke, G., Kokotin, V., Mraczek, K., Leitner, S., Pohl, M. & Ecker, W., 5 Mar 2021, In: Journal of Alloys and Compounds. 856, 158226.

### **On the local evaluation of the hydrogen susceptibility of cold-formed and heat treated advanced high strength steel (AHSS) sheets**

Drexler, A., Bergmann, C., Manke, G., Kokotin, V., Mraczek, K., Pohl, M. & Ecker, W., 7 Jan 2021, In: Materials Science and Engineering A. 800, 13 p., 140276.

### **Modeling of Hydrogen Diffusion in Slow Strain Rate (SSR) Testing of Notched Samples**

Drexler, A., Domitner, J. & Sommitsch, C., 2021, *Advances in Hydrogen Embrittlement Study*. Polyanskiy, V. A. & Belyaev, A. K. (eds.). Cham: Springer, p. 87-111 (Advanced Structured Materials; vol. 143).

**Verification of the generalised chemical potential for stress-driven hydrogen diffusion in nickel**

Drexler, A., He, S., Razumovskiy, V., Romaner, L., Ecker, W. & Pippan, R., 1 Nov 2020, In: Philosophical Magazine / Letters. 100, 11, p. 513-523 11 p.

**Cycled hydrogen permeation through Armco iron – a joint experimental and modeling approach**

Drexler, A., Siegl, W., Ecker, W., Tkadletz, M., Klösch, G., Schnideritsch, H., Mori, G., Svoboda, J. & Fischer, F. D., Nov 2020, In: Corrosion Science. 176, 109017.

**Addressing H-Material Interaction in Fast Diffusion Materials—A Feasibility Study on a Complex Phase Steel**

Massone, A., Manhard, A., Drexler, A., Posch, C., Ecker, W., Maier-Kiener, V. & Kiener, D., 20 Oct 2020, In: Materials. 13, 20, p. 1-20 20 p., 4677.

**Hydrogen embrittlement (HE) of advanced high-strength steels (AHSS)**

Drexler, A., Elsayed, H., Vallant, R., Domitner, J. & Sommitsch, C., 28 Sep 2020.

**Microstructural based hydrogen diffusion and trapping models applied to Fe–C X alloys**

Drexler, A., Depover, T., Leitner, S., Verbeken, K. & Ecker, W., Jun 2020, In: Journal of Alloys and Compounds. 826, 154057.

**An SEM compatible plasma cell for in situ studies of hydrogen-material interaction**

Massone, A., Manhard, A., Jacob, W., Drexler, A., Ecker, W., Hohenwarter, A., Wurster, S. & Kiener, D., 10 Apr 2020, In: Review of Scientific Instruments. 91, 4, 043705.

**Assessment of hydrogen-induced cracking (HIC) susceptibility of V micro-alloyed wire rod steel with different heat treatments**

Elsayed, H., Höllwarth, J., Drexler, A., Galler, M., Sonderegger, B., Vallant, R. & Sommitsch, C., 2020.

**Development and application of an in-situ method for studying material damage by hydrogen embrittlement**

Massone, A., Manhard, A., Ecker, W., Drexler, A. & Kiener, D., Sep 2019.

**Model-based interpretation of thermal desorption spectra of Fe–C–Ti alloys**

Drexler, A., 15 Jun 2019, In: Journal of Alloys and Compounds.

**Hydrogen trapping in heat treated and deformed Armco iron**

Drexler, A., 2019, *NACE Corrosion 2019*.

**A microstructural based creep model applied to alloy 718**

Drexler, A., Jun 2018, In: International Journal of Plasticity.

**Experimental and numerical investigations of the  $\gamma''$  and  $\gamma'$  precipitation kinetics in Alloy 718**

Drexler, A., Apr 2018, In: Materials Science and Engineering A .

**A step towards numerical evaluation of the local hydrogen susceptibility of punched and cold-formed advanced high strength steel (AHSS) sheets**

Drexler, A., Ecker, W., Mraczek, K., Winzer, N., Kokotin, V., Manke, G. & Bergmann, C., 2018.

**Finite element modeling of the residual stress evolution in forged and direct-aged alloy 718 turbine disks during manufacturing and its experimental validation**

Drexler, A., 2017, In: AIP Conference Proceedings.

**Yield stress evolution in Inconel 718 samples under standard heat treatment process conditions of turbine disks**

Drexler, A., 2015, *European Conference on Heat Treatment 2015 and 22nd IFHTSE Congress*.

**Computationally Efficient FE-Models for Simulating the Forced Air Cooling of Turbine Discs**

Drexler, A., Gänser, H. P., Ecker, W., Oberwinkler, B. & Fischerswöring-Bunk, A., 1 Jun 2014, *Thermal Process Modeling: Proceedings from the 5th International Conference on Thermal Process Modeling and Computer Simulation*. ASM International, p. 223-231 8 p.