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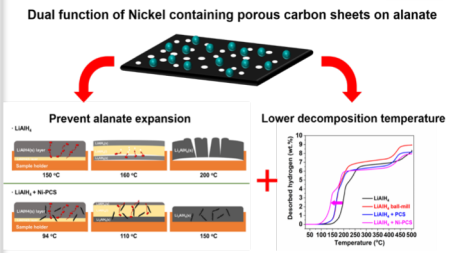
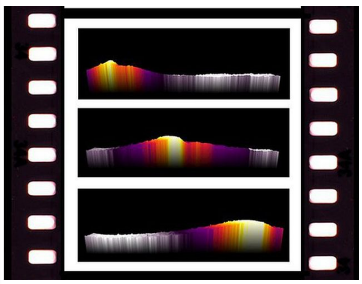
2020

MODIFYED PROPERTIES OF ALANATE ON POROUS CARBON SHEETS



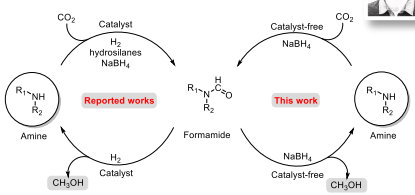
Youngdon Ko, Loris Lombardo, Mo Li, Emad Oveisic, Heena Yang, Andreas Züttel, "Interfacial effect between aluminum-based complex hydrides and nickel-containing porous carbon sheets", ACS Applied Energy Materials 3, 10 (2020), pp. 9685–9695.

VISUALIZATION OF CHEMICAL REACTIONS BY MEANS OF INFRARED THERMOGRAPHY



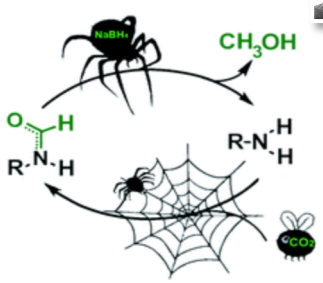
Robin MUTSCHLER, Emanuele MOIOLI, Kun ZHAO, Alessandro PORTA, Leonardo FALBO, Carlo Giorgio VISCONTI, Luca Lietti, Andreas ZÜTTEL, "In operando visualization of chemical reactions by means of infrared thermography", ACS Catalysis ACS Catal. 10, 3 (2020), pp. 1721-1730

SOLVENT- AND CATALYST-FREE CARBON DIOXIDE CAPTURE AND REDUCTION TO FORMATE WITH BOROHYDRIDE IONIC LIQUID



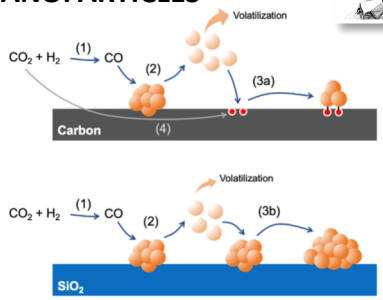
Loris LOMBARDO, Loris, Heena YANG, Kun ZHAO, Paul J. DYSON, Andreas ZÜTTEL, "Solvent- and Catalyst-Free Carbon Dioxide Capture and Reduction to Formate with Borohydride Ionic Liquid", CHEMSUSCHEM 13:8 (2020), pp. 2025-2031

METHANOL PRODUCTION FROM CO_2 VIA AN INTEGRATED, FORMAMIDE-ASSISTED APPROACH



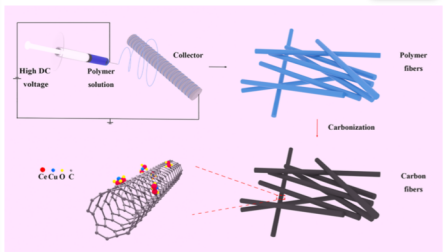
Jorge G. Uranga, Aswin Gopakumar, Tim Pfister, Gunay Imanzade, Loris Lombardo, Andreas Züttel, Paul J. Dyson, "Methanol production from CO_2 via an integrated, formamide-assisted approach", Sustainable Energy Fuels 4 (2020), pp. 1773 – 1779.

THERMAL STABILITY OF SIZE-SELECTED COPPER NANOPARTICLES



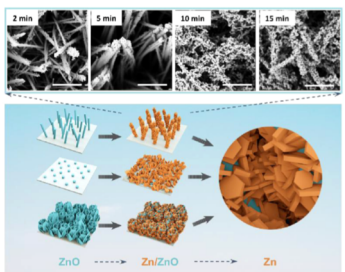
Mo Li, Alexandre Borsay, Mostapha Dakhchoune, Kun Zhao, Wen Luo, Andreas Züttel, "Thermal stability of size-selected copper nanoparticles: Effect of size, support and CO2 hydrogenation atmosphere", APPLIED SURFACE SCIENCE 510 (2020), Article Number: 145439

GRAVIMETRIC AND VOLUMETRIC HYDROGEN DENSITY OF A STORAGE TANK



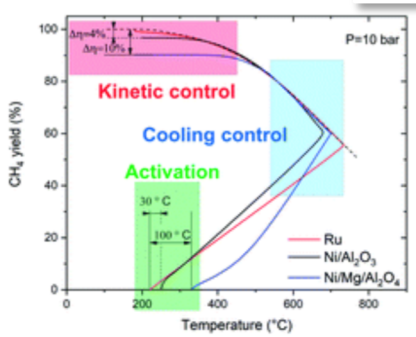
Xin Zong, Jie Zhang, Jinqiu Zhang, Wen Luo, Andreas Züttel, Yueping Xiong, "Synergistic Cu/CeO_2 carbon nanofiber catalysts for efficient CO_2 electroreduction", ELECTRO-CHEMISTRY COMMUNICATIONS 114 (2020), Article Number: 106716

ELECTROCHEMICAL RECONSTRUCTION OF ZNO FOR SELECTIVE REDUCTION OF CO_2 TO CO



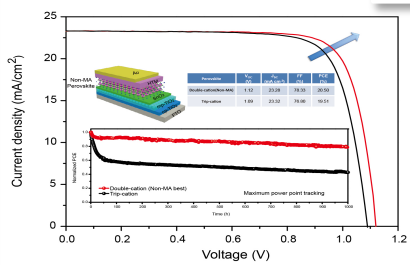
Wen Luo, Qin Zhang, Jie Zhang, Emanuele Moioli, Kun Zhao, Andreas Züttel, "Electrochemical reconstruction of ZnO for selective reduction of CO_2 to CO" APPLIED CATALYSIS B-ENVIRONMENTAL 273 (2020) Article No: 119060

A MODEL-BASED COMPARISON OF RU AND NI CATALYSTS FOR THE SABATIER REACTION



Emanuele Moioli, Andreas Züttel, "A model-based comparison of Ru and Ni catalysts for the Sabatier reaction", SUSTAINABLE ENERGY & FUELS 4:3 (2020), pp. 1396-1408

STABLE AND HIGH-EFFICIENCY METHYLAMMONIUM-FREE PEROVSKITE SOLAR CELLS



Gao, Xiao-Xin; Luo, Wen; Zhang, Yi, Ruiyuan Hu, Bao Zhang, Andreas Züttel, Yaqing Feng Mohammad Khaja Nazeeruddin, "Stable and High-Efficiency Methylammonium-Free Perovskite Solar Cells", ADVANCED MATERIALS 32:9 (2020), Article Number: 1905502

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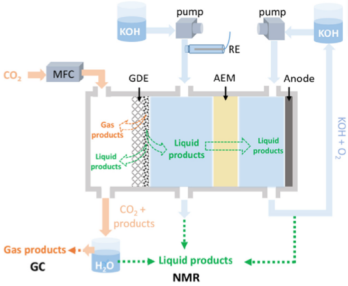
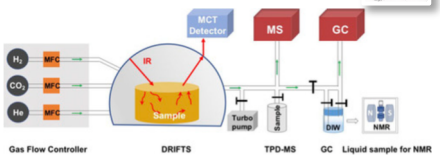
CROSSOVER OF LIQUID PRODUCTS FROM ELECTRO-CHEMICAL CO_2 REDUCTION



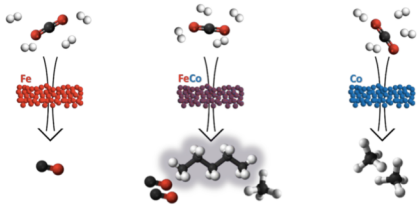
Jie Zhang, Wen Luo, Andreas Züttel, "Crossover of liquid products from electrochemical CO_2 reduction through gas diffusion electrode and anion exchange membrane", JOURNAL OF CATALYSIS 385 (2020), pp: 140-145

HETEROGENEOUSLY CATALYZED CO_2 HYDROGENATION OVER TRANSITION METAL-BASED CATALYSTS



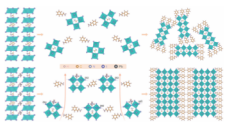
Kun Zhao, Jie Zhang, Wen Luo, Mo Li, Emanuele Moioli, Mariana Spodaryk, and Andreas Züttel, "A combined diffuse reflectance infrared Fourier transform spectroscopy-mass spectroscopy-gas chromatography for the operando study of the heterogeneously catalyzed CO_2 hydrogenation over transition metal-based catalysts", REVIEW OF SCIENTIFIC INSTRUMENTS 91:7 (2020) Article No.: 074102

CO_2 HYDROGENATION OVER UNSUPPORTED Fe-Co NANOALLOY CATALYSTS



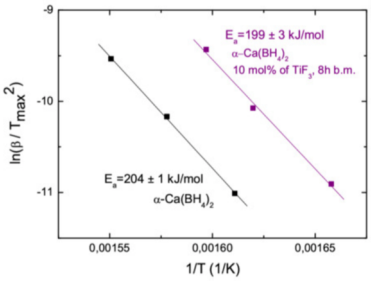
Marco Calizzi, Robin Mutschler, Nicola Patelli, Andrea Migliori, Kun Zhao, Luca Pasquini and Andreas Züttel, "CO_2 Hydrogenation over Unsupported Fe-Co Nanoalloy Catalysts", NANOMATERIALS 10:7 (2020), 1360

HIGH-EFFICIENCY TWO-DIMENSIONAL PEROVSKITE SOLAR CELLS VIA A VERTICAL-ROTATION PROCESS



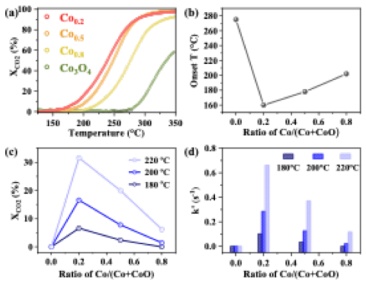
Yi Yang, Cheng Liu, Arup Mahata, Mo Li, Cristina Roldán-Carmona, Yong Ding, Zulqarnain Araina Weidong Xu, Yunhao Yang, Pascal Alexander Schouwink, Andreas Züttel, Filippo De Angelis, Songyuan Dai and Mohammad Khaja Nazeeruddin, "Universal approach toward high-efficiency two-dimensional perovskite solar cells via a vertical-rotation process", ENERGY & ENVIRONMENTAL SCIENCE 13:9 (2020), pp. 3093-3101

Dehydrogenation Temperature of $Ca(BH_4)_2$ Polymorphs



Isabel Llamas Jansa, Oliver Friedrichs, Maximilian Fichtner, Elisa Gil Bardají, Andreas Züttel and Bjørn C. Hauback, «Effects of Ball Milling and TiF_3 Addition on the Dehydrogenation Temperature of $Ca(BH_4)_2$ Polymorphs» ENERGIES 13:18 (2020), Article No: 4828

CO_2 HYDROGENATION REACTION OF COBALT NANOPARTICLES



Kun Zhao, Marco Calizzi, Emanuele Moioli, Mo Li, Alexandre Borsay, Loris Lombardo, Robin Mutschler, Wen Luo, Andreas Züttel, "Unraveling and optimizing the metal-metal oxide synergistic effect in a highly active $Co_x(CoO)_{1-x}$ catalyst for CO_2 hydrogenation", J. of Energy Chemistry 53 (2021), pp. 241-250