Tetsuya Uda, Ph.D.
Professor of Materials Sci. and Eng.,
Kyoto University

Tetsuya Uda is Professor of Materials Science and Engineering at Kyoto University in JAPAN. He graduated from Kyoto University in 1994, and received Ph.D from Tohoku University in 1999. After three years' postdoctoral experience in Haile's group in California Institute of Technology(Caltech), he joined faculty members of Kyoto University in 2005. He has strong background in chemical thermodynamics and teaching it from 2009. His current activities are classified as follows;

(1) Realizing commercial protonic ceramic fuel cells using proton conducting ceramics
(2) Establishment of new continuous titanium production process
(3) Safe recycling process of lithium-Ion Batteries
(4) High-efficiency processes for non-ferrous metals

He has published more than 100 articles including two papers in *Science,* and received several young researcher awards and paper awards from Japanese domestic associations. He is also the recipient of JSPS-PRIZE in 2013 as the title of "*Study on Materials Processing Based on the Thermodynamics Properties*".

Education

Ph.D., Tohoku University, Sendai, Japan Mar. 1999
Thesis: Study on reduction of titanium chloride by electronically mediated reaction (EMR)
M.S., Kyoto University, Kyoto, Japan Mar. 1996
Major: Materials Science and Engineering
B.Eng., Kyoto University, Kyoto, Japan Mar. 1994
Major: Metallurgy

Occupation

Professor, Kyoto University, Kyoto, Japan Aug. 2014 - Present
Materials Science and Engineering
Associate Professor, Kyoto University, Kyoto, Japan Aug. 2006 - July. 2014
Materials Science and Engineering
Assistant Professor, Kyoto University, Kyoto, Japan Apr. 2005 - July 2006
Materials Science and Engineering
Postdoctoral Scholar,
California Institute of Technology, Pasadena, CA, USA May. 2002 – Mar. 2005
Materials Science
Research Associate, Tohoku University, Sendai, Japan Apr. 1999 – Apr. 2002
Institute of Multidisciplinary Research for Advanced Materials

Awards

The best paper award from the Japan institute of metals (1999,2002)
The best paper award from the mining and materials processing institute of Japan (2000,2012,2016,2018)
Kotaro Honda silver medal award for young researcher (2001)
Young researcher award from the Japan institute of metals (2002)
Young researcher award from the mining and materials processing institute of Japan (2009)
JSPS Prize (2014)

The Japan Titanium Society, 35th Technical Award(2018)

Google scholar
https://scholar.google.com/citations?user=KcLfWJYAAAAJ&hl=ja

Selected publication(25)

Breaking away from co-sintering process: Demonstration of an alternative process that brings out a true performance of protonic ceramics
K Ueno, N Hatada, T Uda
International Journal of Hydrogen Energy 119, 416-430,**2025**

Electrodialysis of $LiPF_6$ in Aqueous Solution for Wastewater Treatment in Hydrometallurgical Recycling of Lithium-Ion Batteries
T Miyashita, K Yasuda, T Uda
Advanced Energy & Sustainability Research, **2025**

Three-Layer Electrorefining of Molten Zinc Held on Porous Carbon or Silica Sheets in Molten LiCl–KCl–$ZnCl_2$
K Yasuda, S Yamada, T Uda
Journal of The Electrochemical Society 171 (3), 032506,**2024**

Submerged comminution of lithium-ion batteries in water in inert atmosphere for safe recycling
T Uda, A Kishimoto, K Yasuda, Y Taninouchi
Energy Advances 1 (11), 935-940,**2022**

Suitable electrode materials for titanium sheet deposition
A Kishimoto, Y Yamada, K Funatsu, T Uda
Advanced Engineering Materials 22 (2), 1900747,**2020**

Low-temperature electrodeposition of titanium in molten iodides
K Kumamoto, A Kishimoto, T Uda
Journal of Applied Electrochemistry 50 (12), 1209-1216,**2020**

Reexamination of the phase diagram of the BaO-ZrO_2-Y_2O_3 system: investigation of the presence of separate region in Y-doped $BaZrO_3$ solid solution and the dissolution of Zr in $Ba_3Y_4O_9$
K Ueno, N Hatada, D Han, K Toyoura, T Uda
Journal of Solid State Electrochemistry 24 (7), 1523-1538,**2020**

Preparation of pure and fully dense lanthanum nickelates $La_{n+1}Ni_nO_{3n+1}$ (n = 2, 3, ∞) by post-sintering oxidation process
Y Adachi, N Hatada, K Hirota, M Kato, T Uda
Journal of the American Ceramic Society 102 (12), 7077-7088,**2019**

The best composition of an Y-doped $BaZrO_3$ electrolyte: selection criteria from transport properties, microstructure, and phase behavior
D Han, T Uda
Journal of Materials Chemistry A 6 (38), 18571-18582,**2018**

Discovery of rapid and reversible water insertion in rare earth sulfates: a new process for thermochemical heat storage
N Hatada, K Shizume, T Uda
Advanced Materials 29 (28), 1606569,**2017**

Separation of Nickel and Cobalt Utilizing Selective Reduction of Nickel in Acidic Aqueous Solution
S Shirayama, T Uda
Materials transactions 56 (3), 340-347,**2015**
(Erratum Materials Transaction, 2015, 56(3), page 457)

Origins of structural and electrochemical influence on Y-doped $BaZrO_3$ heat-treated with NiO additive
D Han, K Shinoda, S Tsukimoto, H Takeuchi, C Hiraiwa, M Majima, T Uda
Journal of Materials Chemistry A 2 (31), 12552-12560,**2014**

Tetravalent dysprosium in a perovskite-type oxide
D Han, T Uda, Y Nose, T Okajima, H Murata, I Tanaka, K Shinoda
Advanced Materials 24 (15), 2051-2053,**2012**

Electrochemical polishing of metallic titanium in ionic liquid
T Uda, K Tsuchimoto, H Nakagawa, K Murase, Y Nose, Y Awakura
Materials transactions 52 (11), 2061-2066,**2011**

Revaluation of equilibrium quotient between titanium ions and metallic titanium in NaCl–KCl equimolar molten salt
H Sekimoto, Y Nose, T Uda, A Uehara, H Yamana, H Sugimura
Journal of Alloys and Compounds 509 (18), 5477-5482,**2011**

Precipitation behavior of highly Sr-doped $LaPO_4$ in phosphoric acid solutions
N Hatada, Y Nose, A Kuramitsu, T Uda
Journal of Materials Chemistry 21 (24), 8781-8786,**2011**

Improvement of grain-boundary conductivity of trivalent cation-doped barium zirconate sintered at 1600 C by co-doping scandium and yttrium
S Imashuku, T Uda, Y Nose, K Kishida, S Harada, H Inui, Y Awakura
Journal of The Electrochemical Society 155 (6), B581, ,**2008**

Dehydration behavior of the superprotonic conductor CsH_2PO_4 at moderate temperatures:230 to 260 C
Y Taninouchi, T Uda, Y Awakura, A Ikeda, SM Haile
Journal of Materials Chemistry 17 (30), 3182-3189,**2007**

Processing of yttrium-doped barium zirconate for high proton conductivity
P Babilo, T Uda, SM Haile
Journal of materials research 22 (5), 1322-1330,**2007**

Electroplating of titanium on iron by galvanic contact deposition in NaCl–$TiCl_2$ molten salt
T Uda, TH Okabe, Y Waseda, Y Awakura
Science and Technology of Advanced Materials 7 (6), 490,**2006**

Thin-membrane solid-acid fuel cell
T Uda, SM Haile
Electrochemical and Solid-State Letters 8 (5), A245,**2005**

High-performance solid acid fuel cells through humidity stabilization
DA Boysen, T Uda, CRI Chisholm, SM Haile
Science 303 (5654), 68-70,**2004**

Recovery of rare earths from magnet sludge by $FeCl_2$
T Uda
Materials Transactions 43 (1), 55-62,**2002**

Technique for enhanced rare earth separation
T Uda, KT Jacob, M Hirasawa
Science 289 (5488), 2326-2329,**2000**

Phase equilibria and thermodynamics of the system Dy–Mg–Cl at 1073 K
T Uda, TH Okabe, Y Waseda, KT Jacob
Journal of alloys and compounds 284 (1-2), 282-288, **1998**