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  - $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$
  - Lithium ion batteries; Cathode; High voltage; Rate capability (Fang, H. (167) 223)
  - $\text{LiMn}_2\text{O}_4$
  - Cathode; Wet-milling method; Lithium ion battery (Kakuda, T. (167) 499)
  - Lithium batteries**
  - Electrospinning; Polymer electrolyte; Poly(vinylidene fluoride-co-hexafluoropropylene); Fibrous membrane (Li, X. (167) 491)
  - Lithium batteries**
  - PEO-based composite electrolytes; Calixpyrrole; Super-acid zirconia; Conductivity; Lithium ion transference number (Panero, S. (167) 510)
  - Lithium ion batteries**
  - Cathode;  $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ ; High voltage; Rate capability (Fang, H. (167) 223)
  - Lithium ion batteries**
  - Surface modification; Molten salt; Performance improvement (Bai, Y. (167) 504)
  - Lithium ion battery**
  - Cathode;  $\text{LiMn}_2\text{O}_4$ ; Wet-milling method (Kakuda, T. (167) 499)
  - Lithium ion battery**
  - Fluorination; Surface modification; Carbon anode; Propylene carbonate based solvent (Naga, K. (167) 192)
  - Lithium ion transference number**
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  - Lithium-ion batteries**
  - Alloys; Intermetallic compound; Tin; First-principle calculation (Zhang, J.-j. (167) 171)
  - Lithium-ion batteries**
  - Anode materials; Si composites; Zintl phases (Yoon, S. (167) 520)
  - Lithium-ion battery**
  - Capacity retention; Cycle-life;  $\text{Li}_{4/3}\text{Ti}_{5/3}\text{O}_4$ ;  $\text{Li}_{1+x}(\text{Ni}_{1/3}\text{Co}_{1/3}\text{Mn}_{1/3})_{1-x}\text{O}_2$ ; High power (Lu, W. (167) 212)
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  - Lithium-ion battery**
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  - Lithium-ion battery**
  - $\text{LiNi}_{0.5-x}\text{Mn}_{1.5+x}\text{O}_4$ ; Preparation; Charge-discharge performance; Ultrasonic-assisted co-precipitation method (Yi, T.-F. (167) 185)
  - Lithium-ion battery**
  - $\text{SnS}_2$  anode; Nanosheet; Solvothermal process; Capacity retention; Nanostructural effects (Kim, T.-J. (167) 529)
  - Lithium-ion cell**
  - Satellite application; Electrochemical behavior; Structure analysis; Performance-degradation mechanism (Wang, X. (167) 162)
  - Load change**
  - PEM fuel cell; CFD modeling; Transient behavior; ES-PEMFC (Shimpalee, S. (167) 130)
  - Low-temperature**
  - Solid oxide fuel cell; Metal-supported; Pulsed laser deposition; Thin film; Cell performance (Hui, S.(Rob) (167) 336)
  - LSGM**
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  - Material compatibility**
  - High-temperature proton exchange membrane fuel cell; Electrocatalysts; Polymer electrolyte; Bipolar plates; Durability (Shao, Y. (167) 235)
  - Mathematical model**
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  - Mechanical response**
  - Ionomer; Polymer electrolyte membrane (PEM); Hygro-thermal; Nafion®; Constraint (Solasi, R. (167) 366)
  - Membrane electrode assembly**
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  - Membrane-electrode assembly**
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  - Membrane-electrode-assembly**
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  - Membranes**
  - Fuel cells; Sol-gel processes; Nanocomposites; Electrical properties (Licoccia, S. (167) 79)
  - Mesoporosity**
  - Fuel cells; Proton exchange membranes; Silica xerogels (Colomer, M.T. (167) 53)
  - Metal-supported**
  - Solid oxide fuel cell; Low-temperature; Pulsed laser deposition; Thin film; Cell performance (Hui, S.(Rob) (167) 336)
  - Methanol concentration**
  - DMFC; OCV; Integrated anode; Crossover (Zhang, H. (167) 450)
  - Methanol crossover**
  - Direct methanol fuel cell; Membrane-electrode-assembly; Mixed potential; Mathematical model (Yin, K.-M. (167) 420)
  - Methanol crossover**
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  - Methanol crossover**
  - DMFC; Cathode; EIS; Model (Du, C.Y. (167) 265)
  - Methanol crossover**
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  - Methanol electro-oxidation**
  - Single-wall carbon nanotubes; Fuel cell; Power density; Platinum catalyst; Platinum-ruthenium nanoparticle (Liu, Z. (167) 272)
  - Methanol oxidation**
  - Nanoparticles; Electrodeposition; Three-dimensional electrodes (Bauer, A. (167) 281)
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  - Direct methanol fuel cell; Membrane electrode assembly; Energy density; Power density; System integration (Chen, C.Y. (167) 442)
  - Methanol tolerance**
  - Pd-Co nanoparticle; Oxygen reduction reaction; Electrocatalysis (Wang, W. (167) 243)
  - Microbial fuel cell**
  - Voltage reversal; Stack; Direct electron transfer (Oh, S.-E. (167) 11)
  - Micro-DMFC**
  - Electrocatalytic activity; Carbon-nanotubes; Bubble removal (Wang, S.-K. (167) 413)
  - Microstructure**
  - Solid oxide fuel cell; Strontium-doped lanthanum manganite; Cathode; Yttria stabilized zirconia (Song, H.S. (167) 258)
  - Mixed heat and mass transfer**
  - Natural convection; Modeling planar fuel cell; Dead-ended anode (O'Hayre, R. (167) 118)
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SOFC; Simulation; Experiment (Liu, H.-C. (167) 406)

## Modeling

Solid oxide fuel cell; Delamination; Impedance spectroscopy; Degradation; Diagnostics (Gazzarri, J.I. (167) 430)

## Modeling planar fuel cell

Natural convection; Mixed heat and mass transfer; Dead-ended anode (O'Hayre, R. (167) 118)

## Modified Nafion

Palladium; Direct methanol fuel cell; Methanol crossover (Tian, A.H. (167) 302)

## Molten salt

Surface modification; Performance improvement; Lithium ion batteries (Bai, Y. (167) 504)

## Multilayer

PEMFC; Composite membrane; Sulfonated polyimide; Nafion (Wang, L. (167) 47)

## Nafion®

Direct methanol fuel cell; Methanol crossover; Phenol-formaldehyde resin; Composite membrane (Wu, Z. (167) 309)

## Nafion®

Direct methanol fuel cell; Nodule-like gold; Surface-modified membrane; Carbon monoxide stripping; Swelling (Han, S. (167) 74)

## Nafion®

Ionomer; Polymer electrolyte membrane (PEM); Mechanical response; Hygro-thermal; Constraint (Solasi, R. (167) 366)

## Nafion

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## Nafion degradation

Direct methanol fuel cell; Fading mechanism; Ru dissolution; X-ray absorption spectroscopy; Gas diffusion layer (Sarma, L.S. (167) 358)

## Nanocomposites

Membranes; Fuel cells; Sol-gel processes; Electrical properties (Licoccia, S. (167) 79)

## Nanoparticles

Methanol oxidation; Electrodeposition; Three-dimensional electrodes (Bauer, A. (167) 281)

## Nanosheet

$\text{SnS}_2$  anode; Solvothermal process; Lithium-ion battery; Capacity retention; Nanostructural effects (Kim, T.-J. (167) 529)

## Nanostructural effects

$\text{SnS}_2$  anode; Nanosheet; Solvothermal process; Lithium-ion battery; Capacity retention (Kim, T.-J. (167) 529)

## Natural convection

Mixed heat and mass transfer; Modeling planar fuel cell; Dead-ended anode (O'Hayre, R. (167) 118)

## Network-like architecture

CuO negative electrode; Solution immersion (Wang, H. (167) 206)

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## Nodule-like gold

Direct methanol fuel cell; Surface-modified membrane; Carbon monoxide stripping; Nafion®; Swelling (Han, S. (167) 74)

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Atmospheric plasma spraying; Sol gel; Spin coating; YSZ; Porosity reduction (Rose, L. (167) 340)

## OCV

DMFC; Methanol concentration; Integrated anode; Crossover (Zhang, H. (167) 450)

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## Oxygen reduction reaction

Pd-Co nanoparticle; Electrocatalysis; Methanol tolerance (Wang, W. (167) 243)

## Oxygen reduction reaction (ORR)

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## Palladium

Modified Nafion; Direct methanol fuel cell; Methanol crossover (Tian, A.H. (167) 302)

## Passive

Direct methanol fuel cell; Vapor feed; Heat pipe (Guo, Z. (167) 378)

## Passive DMFC

Open circuit voltage (OCV); Cell performance; Cell temperature; Waiting time (Chen, R. (167) 455)

## Pd-Co nanoparticle

Oxygen reduction reaction; Electrocatalysis; Methanol tolerance (Wang, W. (167) 243)

## PEM fuel cell

CFD modeling; Transient behavior; Load change; ES-PEMFC (Shimpalee, S. (167) 130)

## PEMFC

Composite membrane; Sulfonated polyimide; Nafion; Multilayer (Wang, L. (167) 47)

## PEO-based composite electrolytes

Calixpyrrole; Super-acid zirconia; Conductivity; Lithium ion transference number; Lithium batteries (Panero, S. (167) 510)

## Performance

Fuel cell; Efficiency; Carnot heat engine; Hybrid system (Ro, S.T. (167) 295)

## Performance improvement

Surface modification; Molten salt; Lithium ion batteries (Bai, Y. (167) 504)

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## Phenol-formaldehyde resin

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- Polymer electrolyte  
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- Poly(vinylidene fluoride-*co*-hexafluoropropylene)  
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- Porosity reduction  
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- Power density  
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- Power density  
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- Power generation  
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- Rate capability  
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- Recycling  
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- Relative humidity  
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- Si composites  
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- Silica  
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- Silica xerogels  
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- Simulation  
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- Single-wall carbon nanotubes  
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- Sintering  
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- $\text{SiO}_2$   
Batteries; Ferrate; Fe(VI);  $\text{BaFeO}_4$ ;  $\text{TiO}_2$  (Walz, K.A. (167) 545)
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- SOFC  
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- SOFC**  
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- Sol gel**  
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- Sol-gel processes**  
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- Solid oxide fuel cell**  
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- Solid oxide fuel cell**  
Delamination; Impedance spectroscopy; Modeling; Degradation; Diagnostics (Gazzarri, J.I. (167) 430)
- Solid oxide fuel cell**  
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- Solid oxide fuel cell**  
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- Solid oxide fuel cell (SOFC)**  
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- Solid oxide fuel cell (SOFC)**  
Anode; Carbon deposition; Electrochemical impedance spectroscopy; Ethanol; LSMG (Huang, B. (167) 39)
- Solid oxide fuel cells (SOFCs)**  
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- Solution immersion**  
CuO negative electrode; Network-like architecture (Wang, H. (167) 206)
- Solvent extraction**  
Recycling; Hydrometallurgy; Cathodic active material ( $\text{LiCoO}_2$ ); Cyanex 272 (Swain, B. (167) 536)
- Solvothermal process**  
 $\text{SnS}_2$  anode; Nanosheet; Lithium-ion battery; Capacity retention; Nanostructural effects (Kim, T.-J. (167) 529)
- Spin coating**  
Atmospheric plasma spraying; Sol gel; YSZ; Porosity reduction; OCV (Rose, L. (167) 340)
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- Stack performance**  
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- Startup**  
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- Strontium-doped lanthanum manganite**  
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- Structure analysis**  
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- Sulfonated polyimide**  
PEMFC; Composite membrane; Nafion; Multilayer (Wang, L. (167) 47)
- Sulphur poisoning**  
Solid oxide fuel cell; Delamination; Degradation; Diagnostics; Chromium deposition (Gazzarri, J.I. (167) 100)
- Super-acid zirconia**  
PEO-based composite electrolytes; Calixpyrrole; Conductivity; Lithium ion transference number; Lithium batteries (Panero, S. (167) 510)
- Surface energy**  
Gas diffusion layers; Pureblack® carbon; Carbon nano-fibers; Inverse gas chromatography (Kannan, A.M. (167) 330)
- Surface interaction**  
 $\text{LiFePO}_4$ ; Carbon coating; Fatty acid; Lithium-ion battery; Capacity (Kim, K. (167) 524)
- Surface modification**  
Fluorination; Carbon anode; Lithium ion battery; Propylene carbonate based solvent (Naga, K. (167) 192)
- Surface modification**  
Molten salt; Performance improvement; Lithium ion batteries (Bai, Y. (167) 504)
- Surface-modified membrane**  
Direct methanol fuel cell; Nodule-like gold; Carbon monoxide stripping; Nafion®; Swelling (Han, S. (167) 74)
- Swelling**  
Direct methanol fuel cell; Nodule-like gold; Surface-modified membrane; Carbon monoxide stripping; Nafion® (Han, S. (167) 74)
- System integration**  
Direct methanol fuel cell; Membrane electrode assembly; Energy density; Power density; Methanol sensor-less control (Chen, C.Y. (167) 442)
- Temperature**  
Proton exchange membrane (PEM) fuel cells; Hydrogen crossover; Permeability coefficient; Backpressure; Relative humidity (Cheng, X. (167) 25)
- Temperature field**  
Planar SOFC; Thermo-fluid model; Electrochemical model; Current density; Over potential (Wang, G. (167) 398)
- TGA-FTIR**  
Graphite anode; SEI film; Thermal runaway; Li-ion cell (Yang, H. (167) 515)
- Thermal runaway**  
TGA-FTIR; Graphite anode; SEI film; Li-ion cell (Yang, H. (167) 515)
- Thermo-fluid model**  
Planar SOFC; Electrochemical model; Temperature field; Current density; Over potential (Wang, G. (167) 398)
- Thin film**  
Solid oxide fuel cell; Metal-supported; Low-temperature; Pulsed laser deposition; Cell performance (Hui, S.(Rob) (167) 336)
- Three-dimensional electrodes**  
Nanoparticles; Methanol oxidation; Electrodeposition (Bauer, A. (167) 281)
- Tin**  
Alloys; Intermetallic compound; Lithium-ion batteries; First-principle calculation (Zhang, J.-j. (167) 171)
- $\text{TiO}_2$**   
Batteries; Ferrate; Fe(VI);  $\text{BaFeO}_4$ ;  $\text{SiO}_2$  (Walz, K.A. (167) 545)
- Transient behavior**  
PEM fuel cell; CFD modeling; Load change; ES-PEMFC (Shimpalee, S. (167) 130)
- Tungsten carbide**  
Oxygen reduction reaction (ORR); Fuel cell; Electrocatalyst (Nie, M. (167) 69)
- Two-layer anode**  
IT-SOFC; Polarization; Co-pressing (Yin, Y. (167) 90)
- Ultrasonic-assisted co-precipitation method**  
Lithium-ion battery;  $\text{LiNi}_{0.5-x}\text{Mn}_{1.5+x}\text{O}_4$ ; Preparation; Charge-discharge performance (Yi, T.-F. (167) 185)
- Vapor feed**  
Direct methanol fuel cell; Passive; Heat pipe (Guo, Z. (167) 378)
- Voltage reversal**  
Microbial fuel cell; Stack; Direct electron transfer (Oh, S.-E. (167) 11)
- Waiting time**  
Passive DMFC; Open circuit voltage (OCV); Cell performance; Cell temperature (Chen, R. (167) 455)

## Water management

Proton exchange membrane fuel cell; Dead-end mode; Stack performance;  
Startup; Dynamic behavior (Moçotéguy, Ph. (167) 349)

## Water retention

Composite membrane and electrode; Membrane–electrode assembly; Non-humidified operation; Polymer electrolyte membrane fuel cell; Silica (Vengatesan, S. (167) 325)

## Wet-milling method

Cathode;  $\text{LiMn}_2\text{O}_4$ ; Lithium ion battery (Kakuda, T. (167) 499)

## X-ray absorption spectroscopy

Direct methanol fuel cell; Fading mechanism; Ru dissolution; Nafion degradation; Gas diffusion layer (Sarma, L.S. (167) 358)

## X-ray fluorescence

Hydrogen storage alloys; Ni/MH batteries; La/Ce ratio; Crystalline structure (Ananth, M.V. (167) 228)

## YSZ

Atmospheric plasma spraying; Sol gel; Spin coating; Porosity reduction; OCV (Rose, L. (167) 340)

## Yttria stabilized zirconia

Solid oxide fuel cell; Strontium-doped lanthanum manganite; Microstructure; Cathode (Song, H.S. (167) 258)

## Zintl phases

Lithium-ion batteries; Anode materials; Si composites (Yoon, S. (167) 520)