

Oral Session

Plenary Lecture

PL-01 Membrane applications in the modern water resource management

T. S. Chung

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PL-02 Advancing Metal Oxide-based Laminar Membranes: Water treatment and Organic Solvent Filtration

Keizo Nakagawa

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Invited Lecture

IL-01 Membrane Technology for recovery of heavy metal ions from wastewater

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IL-02 Tailoring of a piezo-photo-thermal solar evaporator for simultaneous steam and power generation

Cong-Han Huang^a, Jen- Xiang Huang^a, Wei-Song Hung^{ab,*}, Kueir-Rarn Lee^b, Juin-Yih Lai^{ab}

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IL-03 Conjugated Polymers as Photocatalysts for Visible-Light-Driven Hydrogen Evolution from Water

Ho-Hsiu Chou^a

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IL-04 Thermally Stable Bioinert Zwitterionic Sulfobetaine Interfaces Tolerated in the Medical Sterilization Process

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IL-05 Guiding Stem Cell Activities Based on Nanometer-Thick Functionalized Poly-p-xylylene Coatings

Hsien-Yeh Chen^{a*}

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IL-06 軟式隱形眼鏡技術

許金隆 處長

視陽光學股份有限公司 研發中心

IL-07 UF 膜“抗阻塞”技術的實際應用

周錦志 總經理

葦泉科技股份有限公司 - 新竹縣湖口鄉湖口工業區工業四路5號

IL-08 薄膜技術應用於半導體產業之技術以及經驗分享

侯傑耀 經理

兆聯實業股份有限公司 技術開發二部

Student Oral Presentation Competition

OR304-01 Homogeneous Anion Exchange Membranes for Formic Acid Enrichment via Electrodialysis

Chao-Chin Hsu^a, Po-Yi Sung^a, Yi-Ming Sun^{a,b,c,*}

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OR304-02 Simultaneous Exfoliation and Functionalization of Hexagonal Boron Nitride in the Aqueous Phase for the Ultrafast Solvent Transport of a Molecular Solute Screening Membrane

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OR304-03 Preparation of Superhydrophobic/Superoleophilic Polymer Composites for Highly Effective Water-in-Oil Emulsion Separations

Dula Daksa Ejeta^a, Chih-Feng Wang^{a,*}, Ching-Hsuan Lin^b, Wei-Song Hung^a, Chien-Chieh Hu^a, Juin-Yih Lai^a

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OR304-04 Tailoring of graphene–organic frameworks membrane to enable reversed electrical-switchable permselectivity in CO₂ separation

Januar Widakdo^a, Tsung-Han Huang^a, Subrahmanya T.M^a, Hannah Faye M. Austria^a, Wei-Song Hung^{a,*}, Chih-Feng Wang^a, Chien-Chieh Hu^a, Kueir-Rarn Lee^b, and Juin-Yih Lai^a

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OR304-05 Preparation of Superhydrophilic Carbon Nanotube/Polymer Membrane for Highly Efficient Separation of Oil-in-Water Emulsions

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OR304-06 Nano-alumina enhanced polyolefin composite for efficient cavitation process application in high performance LIBs separators

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OR304-07 Surface modification of magnetic beads for electrochemical detection of human parathyroid hormone

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OR304-08 Facile one step fabrication of caffeic acid polymer composite coated superwetttable multifunctional membrane substrate for wastewater treatment

Rajakumari Krishnamoorthy, Rajeshkumar Anbazhagan, Hsieh-Chih Tsai, Chih-Feng Wang, Juin-Yih Lai

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OR304-09 High performance self-heated membrane distillation system for energy efficient desalination process

Subrahmanya TM^a, Po Ting Lin^{b,*}, Yu-Hsuan Chiao^c, Januar Widakdo^a
Cheng-Hsiu Chuang^b, Shaneza Fatma Rahmadhanty^b Shiro
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OR304-10 Study on Poly(ether ether ketone) Tubular Nanofiltration Membrane in the Separation of Salt and Dye

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OR307-01 Superhydrophobic SiO₂/PVDF Mixed-Matrix Membranes Applied in the Gravity-driven Separation of Drug Enantiomers

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OR307-02 Supercapacitor Characteristics of MoS₂ Coated onto Honeycomb-shaped Carbon Nanotubes

Wei Li^a, Ya-Lan Yang^a, Syun Yang^b, Yu-Chiao Huang^a, Sheng-Wei
Wang^a, Jing-Xin Lin^b, Cheng-En Li^b, Liang-Chiun Chao^{a,b}, Kuei-Yi
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OR307-03 Establishment of Patient-Specific Cancer Cell Lines by Membrane Filtration Method via Nylon Mesh Filters and PLGA-Silk Screen Membranes

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OR307-04 Comprehensive study on the ineffectiveness of sulfobetaine methacrylate as an antifouling material for steam-sterilized membranes and a potential alternative

Rui-Jie Zhou^a, Chen-Hua Hsu^a, Antoine Venault^{a,*}, Haozhe Zheng^a,
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OR307-05 Controlling the Zwitterionization Degree of Alternate Copolymers for Minimizing Biofouling on PVDF Membranes

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OR307-06 Phenol removal using MIL-88B(Fe)-coated photocatalytic flat-sheet membrane reactor

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OR307-07 The Preparation and Pervaporation Performance of Sodium Alginate/Polyoxometalate Hybrid Membrane

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OR307-08 Preparation of Modified Chitosan Coatings for Kidney Dialysis and Urea Adsorption

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OR307-09 Design, characterization, and development of anodic aluminum oxide template for green energy applications

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OR307-10 Study on Preparation of Silicon Quantum Dots and Application in Hollow Fiber Nanofiltration Membrane

Chih-Hsiang Chang, Hui-An Tsai and Kueir-Rarn Lee

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OR309-01 Influences of Defect Degree in Zirconium Metal-Organic Framework on Mixed Matrix Membrane Performance

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OR309-02 Computational Investigation of Gas Transport Behavior in UiO-66-Based Mixed Matrix Membranes

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OR309-03 Applying Thermal-Tolerant Zwitterionic Copolymers as General Fouling-Resistant Biomaterial Interfaces

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OR309-04 The Study of Grafting Metal Ion Absorbing Polyethylenimine onto Sodium Alginate Film by Atmospheric Pressure Plasma Jet

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OR309-05 The Fabrication and Pervaporation of Polyamide/Polyetherimide Thin-film Composite Membrane using Novel Diamines

Ting-Yi Huang^a, Jen-Yu Lee^b, Micah Belle Marie Yap Ang^a, Shu-Hsien Huang^c, Hui-An Tsai^a, Ru-Jong Jeng^b

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OR309-06 Tailoring of a Piezo-Photo-Thermal Solar Evaporator for Simultaneous Steam and Power Generation

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OR309-07 The Effect of Carbon Quantum Dots Addition on the Membrane Formation of Cellulose Acetate Membrane

Hong-Li Yang, Hui-An Tsai, Kueir-Rarn Lee

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OR309-08 Graphene oxide membranes prepared by spray coating method as oxygen barrier film

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OR309-09 A High-Efficient and Catalytic Platform reduction 4-Nitrophenol

Based on Reusable 3-dimension porous bimetallic membrane

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OR309-10

Analysis of the salt penetration mechanism in high-performance hydrolyzed polyacrylonitrile asymmetric membranes for pervaporation desalination

H. F. M. Austria^a, R. L. G. Lecaros^{a,b}, W. S. Hung^{a,b,*}, L. L. Tayo^c, C. C. Hu^{a,b}, H. A. Tsai^b, K. R. Lee^b and J. Y. Lai^{a,b}

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Poster Session

- P-01 Integration of graphene-based materials in polymeric composite membranes for alcohol dehydration through pervaporation**
R. L. G. Lecaros^{a,b}, C. C. Hu^{a,b}, W.S. Hung^{a,b}, H. A. Tsai^b, K. R. Lee^b, J.Y. Lai^{a,b}
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- P-02 Optical Micro-Cavity (OMC) Implemented with Multi-layered Porous-Silicon Thin Films for Chemical-Sensing Applications**
Kuen-Hsien Wu^a, Chun-Tung Tsai^b and Yao-Chin Wang^c
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c Department of Computer Science and Information Engineering, Cheng Shiu University, Kaohsiung, Taiwan
- P-03 Titanium-Oxide Membrane Coated on Oxidized Porous Silicon by Atomic-Layer-Deposition for Enhancement of Ultra-Violet Detection**
Kuen-Hsien Wu^a and Chun-Tung Tsai^b
a Department of Electrical Engineering, Southern Taiwan University of Science and Technology, Tainan, Taiwan
b Department of Electro-Optical Engineering, Southern Taiwan University of Science and Technology, Tainan, Taiwan
- P-04 Preparation of Liquid-Deposited Al₂O₃:ZnO/p-Si MOS Structure with Various Alumina Doping Volumes**
C. F. Yen^a, S. M. Hu^b, F.W.Fan^c, Y.F.Lu^d
Department of Microelectronics Engineering, National Kaohsiung University of Science and Technology, Kaohsiung 811, Taiwan, ROC
- P-05 Preparation of silicon oxynitride/Si with low interface state density and leakage current by non-vacuum deposition process**
Chih-Feng Yen, Yi-Fan Lu, Shun-Ming Hu, Wen-Feng Fan
Department of Microelectronics Engineering, National Kaohsiung University of Science and Technology
- P-06 Application of surfactants in preparing nanofiltration membranes for enhanced separation performance**
M. B. M. Y. Ang^a, S. H. Huang^b and K.R. Lee^{a,c}
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- P-07 Fabrication of high-flux asymmetric polyethersulfone (PES) ultrafiltration membranes by Nonsolvent Induced Phase Separation process: Effects of H₂O contents in the dope**
Jenn Fang Su^{a,b} (presenting author), Chao-Chuan Ho^a and Liao-Ping Cheng^{a,b}
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- P-08 Research on ZnO-doped Y₂O₃/Si MOS close to ideal C-V property**
C. F. Yen^a, W. F. Fan^b, S. M. Hu^c and Y. F. Lu^d
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- SP-01 Self-Regenerable Hydrogel-Based Cation Exchange Resin Wafer Assisted Electrodialysis for Formic Acid Enrichment**
Chao-Chin Hsu^a, Po-Yi Sung^a, Yi-Ming Sun^{a,b,c,*}
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- SP-02 Zwitterionic Bi-continuous PVDF Membranes with Thermostable Fouling Resistant Properties Fabricated via VIPS Process**
Hana Nur Aini^a, Irish Valerie Maggay^a, Charisma Suba^b, Shuo-Shi Tang^a, Gian Dizon^a, Chien-Jung Wu^a, Ruth Aquino^b, Yung Chang^a and Antoine Venault^a
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- SP-03 Study of Thin Film Growth and Analysis of Bipolar Junction Transistor of MoSe₂ and Graphene**
J.-X. Lin^a, Y.-L. Yang^a, C.-E. Li^a, S. Yang^a, S.-W. Wang^b, Y.-C. Huang^b, W. Li^b, L.-C. Chao^{a,b}, K.-Y. Lee^{a,b}
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- SP-04 Complete Zwitterionic Double Network Hydrogels with Great Toughness and Resistance against Foreign Body Reaction and Thrombus**
Nguyen Cao Tuong Vi^a, Lam Dieu Linh^a, Kang-Ting Huang^a, Pai-Shan Hsieh^b, Lien-Guo Dai^c and Chun-Jen Huang^{a,d,e,*}
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- SP-05 Nitro-Oxidized Cellulose Reinforced Hydrogel Anion Exchange Membranes**
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- SP-06 Controlled Silanization: Functional Antifouling Biointerfaces Developed via Thiol-ene Chemistry with Mercaptosilatrane**
Tran-Thi Anh Hong^a, Pei-Ju Nien^a, Lai-Kwan Chau^b, Chun-Jen Huang^c
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- SP-07 Fabrication and Analysis of Bipolar Junction Transistor with Graphene and Layered HfS₂**
Y.-L. Yang^a, J.-X. Lin^a, C.-E. Li^a, S. Yang^a, S.-W. Wang^b, Y.-C. Huang^b, W. Li^b, C.-H. Ho^{a,b,c}, L.-C. Chao^{a,b}, K.-Y. Lee^{a,b}
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- SP-08 Study on the Separation Performance of Poly(ether ether ketone) Nanofiltration Membrane**

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SP-09 Development of Regular Pores Amphiphilic Dendron/Polyimide Membrane Using Breath Figure Method for Microfiltration

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SP-10 Fabrication and Electronic Characteristics of MoS₂/graphene/MoS₂ Bipolar Junction Transistor

S.-W. Wang^a, W. Li^a, Y.-C. Huang^a, J.-X. Lin^b, Y.-L. Yang^b, C.-E. Li^b, S. Yang^b, L.-C. Chao^{a,b}, K.-Y. Lee^{a,b}

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SP-11 The Preparation of Graphene Oxide/Polyethersulfone Hollow Fiber Membrane for Diesel/Water Separation

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SP-12 Effect of Solvent on the Carbon Quantum Dots Added Cellulose Acetate Membrane Formation

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SP-13 Meldrum's acid-based Polymeric Thin-Film Composite Membranes by Interfacial Polymerization for the Application on Separation Process

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SP-14 Preparation and Pervaporation Performance of Thin-Film Nanocomposite Membrane Embedded with Natural Nanozeolite

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SP-15 Adjusting the molecular design of random copolymers to improve the resistance of PVDF membranes against biofoulants

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SP-16 Study on the Preparation of POM-PMo/SA Blended Membrane for Dehydration of Isopropanol Solution

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SP-17 Evaluation the Impact of Membrane Support and Amine Monomer Structures on the Dye-Salt Separation Efficacy of Thin-Film Composite Nanofiltration Membrane

Ping-Han Wu^a, Micah Belle Marie Yap Ang^a, Shu-Hsien Huang^{a,b}, Hui-An Tsai^a, Kueir-Rarn Lee^a

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SP-18 Tunable d-spacing of Silver-Graphene Oxide Composite Membrane for Dehydration of Isopropanol aqueous solution

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SP-19 Fabrication of Nanofiltration Membrane for Removal of Antibiotics
Yi Ling Wu^a, Micah Belle Marie Yap Ang^a, Chi-Lan Li^a, Shu-Hsien Huang^b, Hui-An Tsai^a, Kueir-Rarn Lee^a

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SP-20 Design of Bio-inert ePTFE Membranes using Ultrasonic Surface Zwitterionization

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SP-21 Luminescent Property of Magnesium Stannate Phosphor Thin Films
M. T. Tsai and Y. C. Lin

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SP-22 Shark skin patterns as anti-corrosion and anti-biofilm
Ting-Hsiang Chiu and Hsiu-Wen Chien^{*}

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SP-23 Nanofibrous poly(vinylidene fluoride) blended with poly(styrene-*r*-acrylic acid) membranes for leukodepletion

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SP-24 Mitigation of Blood Cells Adhesion on Polypropylene Substrates through Simple Surface Zwitterionization

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SP-25 The Study on the Dehydration Performance of Sodium Alginate/Polyoxometalate Hybrid Membrane

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SP-26 Zwitterionic copolymer for the surface modification of Poly(ethylene terephthalate) (PET) to bio-inert control

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SP-27 Effect of Silicon Quantum Dots on the Preparation of PA/PES Hollow Fiber Nanofiltration Membrane

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SP-28 The Preparation and Nanofiltration Performance of Polyamide/Polyethylenimine Thin Film Composite Tubular

Membrane

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SP-29 Characterization and Performance of Modified Cellulose Acetate Asymmetric Membrane for Oil-Water Emulsion Separation

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SP-30 Elucidation of the Failure of Sulfobetaine Methacrylate as Antifouling Material for Steam-Sterilized Membranes and A Potential Alternative

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SP-31 Enhancement of skin tissue repaired by cationic/zwitterionic-based hydrogels for chronic wound healing

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SP-32 Non-toxic solvent dimethyl sulfoxide to prepare poly(ether sulfone) ultrafiltration membranes by nonsolvent induce phase separation

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SP-33 Study on the Formation of Poly(ether ether ketone) Membrane

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SP-34 Preparation of Superhydrophilic/Underwater Superoleophobic Biocompatible Meshes for Oil/Water Separation

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SP-35 Blending of Epoxylated zwitterionic copolymer and affinity ligands for purification of monoclonal antibodies

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SP-36 The Preparation of Mixed Matrix Membrane for Photocatalytic CO₂ Reduction

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SP-37 Plasma-Induced Graft Polymerization of Polyethylenimine onto Polycaprolactone Composite Membrane for Heavy Metal Pollutants Treatment in Industrial Wastewater

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SP-38 The Preparation of Polyamide/ Polyetherimide Thin-film Composite Membrane for Alcohol Solution Dehydration

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SP-39 Two step coating by layering base paints and an epoxylated zwitterionic copolymer for underwater anti-protein-fouling and anti-bacterial attachment properties

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SP-40 The Effect of Hydrotalcite Additive on Nanofiltration of Thermoplastic Polyurethane Tubular Membrane

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SP-41 Preparation of Composite Membranes for Solar Evaporation at the Air-Water Interface

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SP-42 Grafting of microporous membrane with biotin doped poly(Glycidyl methacrylate-co-sulfobetaine methacrylate) for biotin based specific bio-functionalization

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SP-43 The Membrane Formation Mechanism Study of CA + CQDs / NMP / H₂O System

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SP-44 The Study on the Dye Separation of Thermoplastic Polyurethanes Membrane

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SP-45 Effect of Hydrogen Removal in a Membrane Reactor used for Dry Reforming of Methane

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SP-46 Study on Ethanol/Water Dehydration Through Sodium Alginate/Tannic Acid Membrane

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SP-47 Pervaporation study of sodium alginate (SA)/sulfonated polyelectrolyte (SPE) blend membranes for separation of isopropanol/water mixture

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SP-48 Fabrication, Characterization and Performance of Piperazine-Based

Polyamide Composite Nanofiltration Membranes for Dye/Salt Separation

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SP-49 Experimental study on the effect of surfactant on liquid entry pressure and membrane distillation performance

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SP-50 A Nondestructive Surface Zwitterionization by Epoxylated Sulfobetaine Copolymers for the Improved Human Blood-inert Properties

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