

Faculty Profile of Dr. H. Yuvaraj



Dr. H. Yuvaraj

Faculty Fellow

Department of Nanoscience and Technology

Email:yuvaraj@buc.edu.in

Research Area

- Energy storage and conversion
- Sensors
- Photocatalysis
- Environmental remediation

Education & Career

Education

Ph. D.

Subject : Polymer Science

Institution : Pukyong National University, Busan, South Korea

Affiliated University : Pukyong National University

Year of Award : 2008

M. Sc.,

Subject: Chemistry

Institution: Government Arts College, Ooty

Affiliated University : Bharathiar University

Year of Award : 1998

B. Sc.,

Subject: Chemistry

Institution: Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore

Affiliated University: Bharathiar University

Year of Award: 1996

Career**At Bharathiar University (Reverse Order)**

Ramalingasami Fellowship Faculty: August 2017 to Till Date

Past Experience

Assistant Professor: March 2014 to July 2017 at Dongguk University, South Korea

Assistant Professor: March 2013 to February 2014 at Yeungnam University, South Korea

Postdoctoral Research Associate: September 2011 to February 2013 at University of Texas at Dallas, USA

Lecturer: March 2010 to September 2011 at Yeungnam University, South Korea

Postdoctoral Fellow: March 2009 to February 2010 at Yeungnam University, South Korea

Postdoctoral Fellow: September 2008 to February 2009 at Keio University, Japan

Awards**1.Department of Biotechnology**

Country : India

Purpose of award : Research

Year of Award : 2017

2.Korea Research Foundation

Country : Korea

Purpose of award : Research

Year of Award : 2009

3.Korea Research Foundation

Country : Korea

Purpose of award : Research

Year of Award : 2006

Membership

Professional Bodies

1.The American Chemical Society

Type of Membership : Annual

Period : 2019-2020

2.International Association of Advanced Materials

Type of Membership : Annual

Period : 2019-2020

3.International Association of Engineers

Type of Membership : Life member

4.Korean Society of Chemical Engineers

Type of Membership : Annual

Period : 2019-2020

Projects

Funded Projects (National Level)

- [Ongoing](#)
- [Completed](#)

1.DBT

Amino acid based biocompatible polymeric vectors for gene delivery: A facile and green synthesis

2017 to 2022

Amount sanctioned : Rs.32,50,000/

Amount received : Rs22,50,000/

2.Korea Research Foundation

Nano-optical and electrochemical properties of heterogeneous 2D complex materials for highly sensitive electrochemical sensor of radioactive materials

2016 to 2017

Amount received : Rs.30,00,000/-

Consultancy Projects

- [Ongoing](#)
- [Completed](#)

Ongoing Consultancy Project Informations

Completed Consultancy Project Informations

Research Guidance

- [Post-Doc](#)
- [Ph.D.](#)
- [M.Phil.](#)
- [M.Sc.,](#)

ONGOING

1.V. Stella

Supervisor

ongoing

2.P. Dhanaprabhu

Supervisor

ongoing

3.K.V. Kavya

Supervisor

ongoing

AWARDED

1.M. PRIYA

Synthesis of ZnFe₂O₄@rGO composite for visible light driven photocatalytic degradation of Rose Bengal
2019

2.D. ISWARYA

Visible light-induced photocatalytic degradation of organic and inorganic pollutant using Pd@Ni-MOF-74 composite
2020

3.G.R. THARANI

Iron-based metal-organic framework (MIL-101) for solar light-assisted photocatalytic degradation of 4-nitrophenol and rhodamine-B
2020

Research Publication

- [International](#)
- [National](#)
- [Patents](#)
- [Conferences](#)
- [Books / Chapters](#)
- [1.Database](#)

1. [Photothermally induced immunological cell death activated tumor-specific smart nanotherapeutics for effective synergistic targeted triple-negative breast cancer nanotherapy.](#)

V. Raju, Y. Vellingiri, K. Laxmanan, S. Shyamsivappan, B. V. Nipun, Y. Haldorai and S. Dayakar.
Biomacromolecules (2021).

2. [Hexagonal nanostructured cobalt oxide@ nitrogen doped multiwalled carbon nanotubes/ polypyrrole composite for supercapacitor and electrochemical glucose sensor.](#)

S. Ramesh, K. Karuppasamy, Y. Haldorai, A. Sivasamy, H. S. Kim and H. S. Kim.

Colloids and Surfaces B: Biointerfaces, 205, 111840 (2021).

3. [Titanium-based amine-terminated metal-organic framework/TiO₂ composite for effective degradation of dyes under solar light irradiation.](#)

D. Pattappan, S. Vargheese, K.V. Kavya, R.T. R. Kumar and Y. Haldorai.

Journal of Electronic Materials, 50, 2565–2575 (2021).

4. [Hierarchical flower-like birnessite-type MnO₂@2D covalent organic framework-derived nitrogen-doped porous carbon composite for symmetric supercapacitor with high energy density and outstanding cyclic stability: constructing a 9.0 V symmetric supercapacitor cell.](#)

S. Vargheese, D.Muthu, D. Pattappan, K.V. Kavya, R.T. R. Kumar and Y. Haldorai.

Electrochimica Acta, 364, 137291 (2020).

5. [Mn-Ni Binary Metal oxide for high-performance supercapacitor and electro-catalyst for oxygen evolution reaction.](#)

M. Dinesh, Y. Haldorai and R. T. R. Kumar.

Ceramic International, 46, 28006-28012 (2020).

6. [MoS₂ nanosheets decorated MWCNTs based electrocatalyst for 4-nitrophenol detection and hydrogen evolution reaction.](#)

M. Dinesh, K. Muthumalai, Y. Haldorai and R.T. R. Kumar.

Electroanalysis, 32, 2571-2580 (2020).

7. [Triazine-based 2D covalent organic framework-derived nitrogen-doped porous carbon for supercapacitor electrode.](#)

S. Vargheese, M. Dinesh, K.V. Kavya, D. Pattappan, R.T. R. Kumar and Y. Haldorai.

Carbon Letters (2020).

8. [Plasmonic effect and charge separation-induced photocatalytic degradation of organic pollutants utilizing Au/ZnFe₂O₄@rGO ternary composite.](#)

D. Pattappan, K.V. Kavya, S. Vargheese, R.T. R. Kumar and Y. Haldorai.

Applied Physics A, 126, 785 (2020).

9. [Bioreceptor-free, sensitive and rapid electrochemical detection of patulin fungal toxin, using a reduced graphene oxide@SnO₂ nanocomposite.](#)

S. Shukla, Y. Haldorai, I. Khan, S. M. Kang, C. H. Kwak, S. Gandhi, V. K. Bajpai, Y.

S. Huh and Y. K. Han.

Materials Science & Engineering C, 113, 110916 (2020).

10. [Fluorescent immunoliposomal nanovesicles for rapid multi-well immuno-biosensing of histamine in fish samples.](#)

V. K. Bajpai, C. W. Oh, I. Khan, Y. Haldorai, S. Gandhi, H. Lee, X. Song, M. Kim, A. Upadhyay, L. Chen, Y. S. Huh, Y. K. Han and S. Shukla.
Chemosphere, 243, 125404 (2020).

11. [A sustainable graphene aerogel capable of the adsorptive elimination of biogenic amines and bacteria from soy sauce and highly efficient cell proliferation.](#)

V. K. Bajpai, S. Shukla, I. Khan, S. M. Kang, Y. Haldorai, K. M. Tripathi, S. H. Jung, L. Chen, T. Y. Kim, Y. S. Huh and Y. K. Han.
ACS Applied Materials & Interfaces, 11, 43949-43963 (2019).

12. [Birnessite MnO₂ decorated MWCNTs composite as a nonenzymatic hydrogen peroxide sensor.](#)

M. Dinesh, C. Revathi, Y. Haldorai and R. T. R. Kumar.
Chemical Physics Letters, 731, 136612, (2019).

13. [Nitrogen-implanted ZnO nanorod arrays for visible light photocatalytic degradation of a pharmaceutical drug acetaminophen.](#)

D. R. Kumar, K. S. Ranjith, Y. Haldorai, A. Kandasami and R. T. R. Kumar.
ACS Omega, 4, 11973- 11979 (2019).

14. [Synthesis of triazine-based porous organic polymer: a new material for double layer capacitor.](#)

S. Vargheese, R. T. R. Kumar and Y. Haldorai.
Materials Letters, 249, 53-56 (2019).

15. [A protamine-conjugated gold decorated graphene oxide composite as an electrochemical platform for detection of heparin.](#)

A. Rengaraj, Y. Haldorai, S. K. Hwang, E. Lee, M. W. Oh, T. J. Jeon, Y. K. Han and Y. S. Huh.
Bioelectrochemistry, 128, 211-217 (2019).

16. [Quaternary PtRuFeCo nanoparticles supported N-doped graphene as an efficient bifunctional electrocatalyst for low-temperature fuel cells.](#)

M. Rethinasabapathy, S. M. Kang, Y. Haldorai, N. Jonna, M. Janakiraman, G. W. Lee, S. C. Jang, N. Balasubramanian and Y. S. Huh.
Journal of Industrial & Engineering Chemistry, 69, 285-294 (2019).

17. [Versatile poly \(diallyl dimethyl ammonium chloride\)-layered nanocomposites for removal of cesium in water purification.](#)

S. C. Jang, S. M. Kang, G. Y. Kim, Y. Haldorai, I. Lee, Y. K. Han, J. C. Renshaw, Y. S. Huh and C. Roh.

Materials, 11, 998 (2018).

18. [Porous 3D Prussian blue/cellulose aerogel as a decorporation agent for removal of ingested cesium from the gastrointestinal tract.](#)

I. S. Lee, S. H. Kim, M. Rethinasabapathy, Y. Haldorai, G. W. Lee, S. R. Choe, S. C. Jang, S. M. Kang, C. Roh, W. S. Cho and Y. S. Huh.

Scientific Reports, 8, 4540 (2018).

19. [Customized microfluidic reactor based on droplet formation for synthesis of monodispersed silver nanoparticles.](#)

C. H. Kwak, S. M. Kang, E. Jung, Y. Haldorai, Y. K. Han, W. S. Kim, T. Yu and Y. S. Huh.

Journal of Industrial and Engineering Chemistry, 63, 405-410 (2018).

20. [Electrochemical coupled immunosensing platform based on graphene oxide/gold nanocomposite for sensitive detection of cronobacter sakazakii in powdered infant formula.](#)

S. Shukla, Y. Haldorai, V. K. Bajpai, A. Rengaraj, S. K. Hwang, X. Song, M. Kim, Y. S. Huh and Y. K. Han.

Biosensors & Bioelectronics, 30, 139-149 (2018).

21. [A composite consisting of microporous carbon and cobalt \(III\) oxide and prepared from zeolitic imidazolate framework-67 for voltammetric determination of ascorbic acid.](#)

Y. Haldorai, S. R. Choe, Y. S. Huh and Y. K. Han.

Microchimica Acta, 185, 116 (2018).

22. [Fabrication of alginate/humic acid/Fe-aminoclay hydrogel composed of a grafted-network for the efficient removal of strontium ions from aqueous solution.](#)

S. R. Choe, Y. Haldorai, S.C. Jang, M. Rethinasabapathy, Y. C. Lee, Y. K. Han, C. Roh and Y. S. Huh.

Environmental Technology & Innovation, 9, 285-293 (2018).

23. [Magnetite nanoparticles decorated reduced graphene oxide composite as an efficient and recoverable adsorbent for the removal of cesium and strontium ions](#)

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C. R. Minitha, R. Suresh, U. K. Maity, Y. Haldorai, S. Vijayakumar, P. Manoravi, M. Joseph and R. T. R. Kumar.
Industrial & Engineering Chemistry Research, 57, 1225–1232 (2018).

24. [Metal-organic framework derived nanoporous carbon/Co₃O₄ composite electrode for high-performance supercapacitor and sensing platform for glucose detection.](#)

Y. Haldorai, S. R. Choe, Y. S. Huh and Y. K. Han.
Carbon, 127, 366–373 (2018).

25. [Current demands for food-approved liposome nanoparticles in food and safety sector.](#)

S. Shukla, Y. Haldorai, S. K. Hwang, V. K. Bajpai, Y. S. Huh and Y. K. Han.
Frontiers in Microbiology (Review), 8, 2398 (2017).

26. [Ternary PtRuFe nanoparticles supported N-doped graphene as an efficient bifunctional catalyst for methanol oxidation and oxygen reduction reactions.](#)

M. Rethinasabapathy, S. M. Kang, Y. Haldorai, M. Janakiraman, N. Jonna, S. R. Choe and B. Natesan.
International Journal of Hydrogen Energy, 42, 30738–30749 (2017).

27. [Facile fabrication of paper-based analytical devices for rapid and highly selective colorimetric detection of cesium in environmental samples.](#)

S. M. Kang, S. C. Jang, Y. Haldorai, A. T. E. Vilian, M. Rethinasabapathy, Y. K. Han, Y. S. Huh and C. Roh.
RSC Advances, 7, 48374–48385 (2017).

28. [Electrochemical determination of chloramphenicol using a glassy carbon electrode modified with dendrite-like Fe₃O₄ nanoparticles.](#)

K. Giribabu, S.C. Jang, Y. Haldorai, M. Rethinasabapathy, S. Y. Oh, A. Rengaraj, W. S. Cho, C. Roh and Y. S. Huh.
Carbon Letters, 23, 38–47 (2017).

29. [Nanocrystalline Co₃O₄@ polypyrrole/MWCNT hybrid nanocomposite for high performance electrochemical supercapacitor.](#)

S. Ramesh, Y. Haldorai and H. S. Kim.
RSC Advances, 7, 36833–36843 (2017).

30. [Nanostructured Co₃O₄/nitrogen doped carbon nanotube composites for high-performance supercapacitors.](#)

S. Ramesh, Y. Haldorai, A. Sivasamy and H. S. Kim.
Materials Letters, 206, 39-43 (2017).

31. [Mechanochemical synthesis of silica-lithium manganese oxide composite for the efficient recovery of lithium ions from seawater.](#)

T. Ryu, A. Rengaraj, Y. Haldorai, J. Shin, S. R. Choe, G. W. Lee, S. K. Hwang, Y. K. Han, Y. S. Huh and K. S. Chung.
Solid State Ionics, 308, 77-83 (2017).

32. [Glassy carbon electrode modified with poly \(methyl orange\) as an electrochemical platform for the determination of 4-nitrophenol at nanomolar levels.](#)

K. Giribabu, Y. Haldorai, M. Rethinasabapathy, S. C. Jang, R. Suresh, R. Manigandan, S. P. Kumar, W. S. Cho, Y. K. Han, C. Roh, Y. S. Huh and V. Narayanan.
Current Applied Physics, 17, 1114-1119 (2017).

33. [Covalent triazine polymer-Fe₃O₄ nanocomposite for strontium ion recovery from seawater.](#)

A. Rengaraj, Y. Haldorai, P. Puthiaraj, S. K. Hwang, T. Ryu, J. Shin, Y. K. Han, W. S. Ahn and Y. S. Huh.
Industrial & Engineering Chemistry Research, 56, 4984–4992 (2017).

34. [Fabrication of nanostructured MnO₂/carbon nanotube composite from 3D precursor complex for high-performance supercapacitor.](#)

S. Ramesh, H. S. Kim, Y. Haldorai, Y. K. Han and J. H. Kim.
Materials Letters, 196, 132-136 (2017).

35. [Electrochemical determination of dopamine using a glassy carbon electrode modified with TiN-reduced graphene oxide nanocomposite.](#)

Y. Haldorai, A. T. E. Vilian, M. Rethinasabapathy, Y. S. Huh and Y. K. Han.
Sensors and Actuators B: Chemical, 247, 61-69 (2017).

36. [PAMAM/5-fluorouracil drug conjugate for targeting E6 and E7 oncoproteins in cervical cancer: a combined experimental/in silico approach.](#)

A. Rengaraj, S. Balaji, Y. Haldorai, D. Yesudhas, N. S. Heo, S. Kwon, S. Choi, Y. K. Han, N. H. Shenpagam and Y. S. Huh.
RSC Advances, 7, 5046-5054 (2017).

37. [Electrochemical determination of tryptophan using a glassy carbon electrode](#)

[modified with flower-like structured nanocomposite consisting of reduced graphene oxide and SnO₂.](#)

Y. Haldorai, S. H. Yeon, Y. S. Huh and Y. K. Han.

Sensors and Actuators B: Chemical, 239, 1221-1230 (2017).

38. [Synergistically strengthened 3D micro-scavenger cage adsorbent for selective removal of radioactive cesium.](#)

S. C. Jang, S. M. Kang, Y. Haldorai, K. Giribabu, G. W. Lee, C. S. Lee, Y. C. Lee, Y. K. Han, C. Roh and Y. S. Huh.

Scientific Reports, 6, 38384 (2016).

39. [Facile synthesis of \$\alpha\$ -MnO₂ nanorod/graphene nanocomposite paper electrodes using a 3D coordination complex as a precursor for supercapacitors and sensing platform to detect nitrophenol.](#)

Y. Haldorai, K. Giribabu, S. K. Hwang, C. H. Kwak, Y. S. Huh and Y. K. Han.

Electrochimica Acta, 222, 717-727 (2016).

40. [Platinized titanium nitride/graphene ternary hybrids for direct methanol fuel cells and high-performance supercapacitors.](#)

Y. Haldorai, D. A. Salas, C. S. Rak, Y. S. Huh, Y. K. Han and W. Voit.

Electrochimica Acta, 220, 465-474 (2016).

41. [Recovery of lithium ions from seawater using a continuous flow adsorption column packed with granulated chitosan-lithium manganese oxide.](#)

T. Ryu, Y. Haldorai, A. Rengaraj, J. Shin, H. J. Hong, J. Y. Kim, G. W. Lee, Y. K. Han, Y. S. Huh and K. S. Chung.

Industrial & Engineering Chemistry Research, 55, 7218-7225 (2016).

42. [Synthesis of graphene oxide-poly \(2-hydroxyethyl methacrylate\) composite by dispersion polymerization in supercritical CO₂: adsorption behavior for the removal of organic dye.](#)

D. Kharismadewi, Y. Haldorai, V. H. Nguyen, D. Tuma and J. J. Shim.

Composite Interfaces, 23, 719-739 (2016).

43. [A facile and straightforward strategy to decorate ZnO nanoparticles on graphene surface: antimicrobial property.](#)

Y. Haldorai, Y. K. Han and Y. S. Huh.

Journal of Nanoscience and Nanotechnology, 16, 6949-6954 (2016).

44. [Porous covalent triazine polymer as a potential nanocargo for cancer therapy](#)

[and imaging.](#)

A. Rengaraj, P. Puthiaraj, Y. Haldorai, N. S. Heo, S. Kwon, Y. K. Han, W. S. Ahn and Y. S. Huh.

ACS Applied Materials & Interfaces, 8, 8947-8955 (2016).

45. [Direct electrochemistry of cytochrome c immobilized on hexagonal-like titanium nitride/multi-walled carbon nanotube composite for amperometric nitrite biosensor.](#)

Y. Haldorai, S. K. Hwang, A. I. Gopalan, Y. S. Huh, Y. K. Han, W. Voit, G. S. Anand and K. P. Lee.

Biosensors and Bioelectronics, 79, 543-552 (2016).

46. [An enzyme-free electrochemical sensor based on reduced graphene oxide/Co₃O₄ nanospindle composite for sensitive detection of nitrite.](#)

Y. Haldorai, J. Y. Kim, A. T. E. Vilian, N. S. Heo, Y. S. Huh and Y. K. Han.

Sensors and Actuators B: Chemical, 227, 92-99 (2016).

47. [Porous three-dimensional graphene foam/Prussian blue composite for efficient removal of radioactive ¹³⁷Cs.](#)

S. C. Jang, Y. Haldorai, G. W. Lee, S. K. Hwang, Y. K. Han, C. Roh and Y. S. Huh.

Scientific Reports, 5, 17510 (2015).

48. [Surfactant-assisted hydrothermal synthesis of flower-like tin oxide/graphene composites for high-performance supercapacitors.](#)

Y. Haldorai, Y. S. Huh and Y. K. Han.

New Journal of Chemistry, 39, 8505-8512 (2015).

49. [Electrodeposition of flower-like nickel oxide on CVD-grown graphene to develop an electrochemical non-enzymatic biosensor.](#)

A. Rengaraj, Y. Haldorai, C. H. Kwak, S. Ahn, K. J. Jeon, Y. K. Han and Y. S. Huh.

Journal of Materials Chemistry B, 3, 6301-6309 (2015).

50. [Properties of chitosan/magnetite nanoparticles composites for efficient dye adsorption and antibacterial agent.](#)

Y. Haldorai, D. Kharismadewi and J. J. Shim.

Korean Journal of Chemical Engineering, 32, 1688-1693 (2015).

51. [Response surface methodology for the optimization of rare earth metal recovery from an aqueous solution using a Fe₃O₄/chitosan nanocomposite.](#)

Y. Haldorai, A. Rengaraj, Y. K. Han and Y. S. Huh.

Material Science and Engineering B, 195, 20-29 (2015).

52. [Poly \(aniline-co-o- toluidine\) encapsulated zinc oxide nanocomposite: preparation, characterization and photocatalytic reduction of Cr \(VI\).](#)

K. Sivakumar, V. S. kumar, J. Jin Shim and Y. Haldorai.

Synthesis and Reactivity in Inorganic Metal-Organic and Nano-Metal Chemistry, 45, 660-666 (2015).

53. [Highly efficient hydrogen production via water splitting using Pt@MWNT/TiO₂ ternary hybrid composite as a catalyst under UV-visible light.](#)

Y. Haldorai, A. Rengaraj, J. B. Lee, Y. S. Huh and Y. K. Han.

Synthetic Metals, 199, 345-352 (2015).

54. [Fabrication of metal oxide-polymer hybrid nanocomposites.](#)

Y. Haldorai and J. J. Shim.

Advances in Polymer Science, 267, 249-282 (2015).

55. [Fabrication of nano TiO₂@graphene composite: reusable photocatalyst for hydrogen production, degradation of organic and inorganic pollutants,](#)

Y. Haldorai, A. Rengaraj, C. H. Kwak, Y. S. Huh and Y. K. Han.

Synthetic Metals, 198, 10-18 (2014).

56. [Reversible addition-fragmentation chain transfer polymerization of vinyl acetate and vinyl pivalate in supercritical carbon dioxide.](#)

Q. L. Pham, Y. Haldorai, V. H. Nguyen, C. K. Kang and J. J. Shim.

Korean Journal of Chemical Engineering, 31, 2101-2107 (2014).

57. [Synthesis of poly \(vinyl pivalate\) by atom transfer radical polymerization in supercritical carbon dioxide.](#)

M. N. Islam, Y. Haldorai, V. H. Nguyen and J. J. Shim.

European Polymer Journal, 61, 93-104 (2014).

58. [Magnetic Nanocomposites for environmental and biomedical applications.](#)

S. Kalia, S. Kango, A. Kumar, Y. Haldorai, B.Kumari and R. Kumar.

Colloid and Polymer Science, 292, 2025-2052 (2014).

59. [Supercritical fluid mediated synthesis of highly exfoliated graphene/ZnO composite for photocatalytic hydrogen production.](#)

Y. Haldorai and J. J. Shim.

Materials Letters, 133, 24-27 (2014).

60. [Nano ZnO@reduced graphene oxide composite for high performance supercapacitor: Facile synthesis in supercritical fluid.](#)

Y. Haldorai, W. Voit and J. J. Shim.

Electrochimica Acta, 120, 65-72 (2014).

61. [Ag@graphene oxide nanocomposite as an efficient visible-light plasmonic photocatalyst for the degradation of organic pollutants: a facile green synthetic approach.](#)

Y. Haldorai, B. K. Kim, Y. L. Jo and J. J. Shim.

Materials Chemistry & Physics, 143, 1452-1461 (2014).

62. [Conducting copolymer/ZnO nanocomposite: synthesis, characterization and its photocatalytic activity for removal of pollutants.](#)

K. Sivakumar, V. S. kumar, J. J. Shim and Y. Haldorai.

Synthesis and Reactivity in Inorganic Metal-Organic and Nano- Metal Chemistry, 44, 1414-1420 (2014).

63. [Controlled radical polymerization of vinyl acetate in supercritical CO₂ catalyzed by CuBr/terpyridine.](#)

M. T. Islam, Y. Haldorai, V. H. Nguyen, M. N. Islam, C. S. Ra and J. J. Shim.

Korean Journal of Chemical Engineering, 31, 1088-1094 (2014).

64. [Chemo-responsive bilayer actuator film: Fabrication, characterization and actuator response.](#)

Y. Haldorai and J. J. Shim.

New Journal of Chemistry, 38, 2653-2659 (2014).

65. [ZnO nanoparticles dispersed poly \(aniline-co-o-anthranilic acid\) composites: photocatalytic reduction of Cr \(VI\) and Ni \(II\).](#)

Y. Haldorai, K. Sivakumar and J. J. Shim.

Polymer Composites, 35, 839-846 (2014).

66. [An efficient removal of methyl orange dye from aqueous solution by adsorption onto chitosan/MgO composite: a novel reusable adsorbent.](#)

Y. Haldorai and J. J. Shim.

Applied Surface Science, 292, 447-453 (2014).

67. [Fabrication of \[60\] fullerene grafted polymer: self- assembly behavior in polar solvents.](#)

Y. Haldorai, M. N. Islam and J. J. Shim.

Asian Journal of Chemistry, 26, 617-620 (2014).

68. [Photocatalytic and antimicrobial activities of poly\(aniline-co-o-anisidine\)/ZnO nanocomposite.](#)

K. Sivakumar, V. S. kumar, J. J. Shim and Y. Haldorai.

Asian Journal of Chemistry, 26, 600-606 (2014).

69. [Novel chitosan-TiO₂ nanohybrid: preparation, characterization, antibacterial and photocatalytic properties.](#)

Y. Haldorai and J. J. Shim.

Polymer Composites, 35, 327-333 (2014).

70. [Facile synthesis of CuO nanospindles from 3D coordination complex and its nanofluid application.](#)

Y. Haldorai and J. J. Shim.

Materials Letters, 116, 5-8 (2014).

71. [Triflic anhydride: a mild reagent for highly efficient synthesis of 1,2-benzisoxazoles, isoxazolo, and isothiazolo quinolines without additive or base.](#)

R. G. Kalkhambkar and Y. Haldorai.

Synthetic Communications, 44, 547-555 (2014).

72. [Polyester-tobacco composite: A novel anticorrosion material for mild steel in acid medium.](#) P. Sounthari, T. Kavitha, A. Kiruthika, J. Saranya, S. Chitra, K.

Parameswari and H. Yuvaraj, Materials Focus, 3, 455-464 (2014).

73. [Multifunctional chitosan-copper oxide hybrid material: photocatalytic and antibacterial activities.](#)

Y. Haldorai and J. J. Shim.

International Journal of Photoenergy, 2013, 245646 (2013).

74. [Bronsted-acidic imidazolium ionic liquid \[bmim\(SO₃H\)\]\[OTf\]-a mild catalyst for highly efficient synthesis of coumarins.](#)

Y. Haldorai, R. G. Kalkhambkar and J. J. Shim.

Asian Journal of Chemistry, 25, 9379-9383 (2013).

75. [One-pot synthesis of nanoscale ZnO: optical, photocatalytic and antimicrobial properties.](#)

Y. Haldorai, S. Chitra and J. J. Shim.

Advanced Science, Engineering and Medicine, 5, 1044-1050 (2013).

76. [Chitosan-zinc oxide hybrid composite for enhanced dye degradation and antibacterial activity.](#)

Y. Haldorai and J. J. Shim.

Composite Interfaces 20, 365-377 (2013).

77. [Polymerization of vinyl pivalate in supercritical carbon dioxide and the saponification for the preparation of syndiotacticity-rich polyvinyl alcohol.](#)

Q. L. Pham, V. H. Nguyen, Y. Haldorai and J. J. Shim.

Korean Journal of Chemical Engineering, 30, 1153-1161 (2013).

78. [Zinc oxide nanoparticles reinforced conducting poly\(aniline-co-p-phenylenediamine\) nanocomposite: photocatalytic activity.](#)

K. Sivakumar, V. S. kumar and Y. Haldorai.

Composite Interfaces, 19, 397-409 (2012).

79. [Synthesis of polymer-inorganic filler nanocomposites in supercritical CO₂.](#)

Y. Haldorai, J. J. Shim and K. T. Lim.

Journal of Supercritical Fluids, 71, 45-63 (2012).

80. [Core-shell ZrO₂/PMMA composites via dispersion polymerization in supercritical fluid: Synthesis, characterization and mechanism.](#)

Y. Haldorai, T. Zong and J. J. Shim.

Journal of Applied Polymer Science, 123, 1176-1183 (2012).

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81. [A facile approach to the synthesis of high-quality NiO nanorods: Electrochemical and antibacterial properties.](#)

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Details of Patent : 1.Etching, cleaning and drying methods using supercritical fluid and chamber systems using these methods

International/National : International

Year of Award : 2014

Application / Grant Number : US8790470

Details of Patent : 2. Etching, cleaning and drying methods using supercritical fluid and chamber systems using these methods

International/National : International

Year of Award : 2013

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Details of Patent : 3. Etching, cleaning and drying methods using supercritical fluid and chamber systems using these methods

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Year of Award : 2011

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Details of Patent : 4. Method for preparing a nanocomposite comprising an inorganic oxide in a conductive polymer polymerized by using supercritical carbon dioxide

International/National : International

Year of Award : 2008

Application / Grant Number : Korean patent 1020070013477

Details of Patent : 5. Method for preparing core-shell type nanocomposite particles having both physical merits of an inorganic material and processability and flexibility of polymer by using supercritical carbon dioxide as a reaction solvent

International/National : International

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Conference Info

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