Vinothkumar Venkatachalam, PhD

Postdoctoral Associate

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Google scholar: https://scholar.google.com/citations?user=siQGVPUAAAAJ&hl=en

Research gate: https://www.researchgate.net/profile/Venkatachalam_Vinothkumar

Objective

To link with an institute, where I could learn and update my knowledge and thereby to be part of an institute through dynamic positive approaches.

Academic qualification

Qualification/Specialization	Year of completion	Board/Institute	Aggregate score percentage
Ph.D. (Chemistry)	2022	National Taipei University of Technology, Taiwan	88%
M.Sc. (Chemistry)	2018	Alagappa University, Karaikudi, India	77%
B.Sc. (Chemistry)	2016	Periyar University, Salem, India	80%
H.S.C. (Science)	2013	K.S.R. HSS, Tiruchengode, India .	83%
S.S.L.C.	2011	Govt. HSS, Kokkarayanpettai, India	86%

H.S.C. – Higher Secondary Leaving Certificate
S.S.L.C. – Secondary School Leaving Certificate

Research experience

Ph.D. (2019-2022, National Taipei University of Technology, Taiwan)

Title: Facile design of binary metal oxides for selective electrochemical sensing of antipsychotic drugs

Projects

Title:1 Facile synthesis of transition metal phosphates (TMPs) for the determination of electrochemical sensor and application in real fruits and biological samples

Title:2 Development of bifunctional catalyst for electrochemical sensor and energy storage applications

(Advisor: **Dr. Shen-Ming Chen,** Lifetime Distinguished Professor)

Research assistant (Project-2018, Tunghai University, Taiwan)

Title: Spiral ring molecule is a hole transporting materials for perovskite solar cells

(Advisor: **Dr. Yuan Jay Chang,** Professor)

M.Sc. (Project-2017, Alagappa University, India)

***Title*:** Synthesis, characterization, and biological activities of L-tryptophan and L-proline based copper(II) metal complexes

(Advisor: **Dr. N. Sengottuvelan,** Assistant Professor)

Areas of research & interests

Materials Chemistry & Electrochemistry specifically

- Nanomaterials synthesis
- Materials characterization
- Electrochemical (bio)sensors
- Bifunctional electrocatalyst (sensing & supercapacitors)
- Antipsychotic, antibiotic & antitubercular drugs detection

Instruments handled & skills

- Fourier Transform Infrared Spectroscopy
- Raman Spectroscopy
- Ultraviolet-Visible Spectroscopy

- Electrochemical Impedance Spectroscopy
- Voltammetry
- Electrode fabrication
- High-Temperature Muffle furnace
- X-ray Photoelectron Spectroscopy analysis
- X-ray Diffraction analysis
- Origin
- ChemDraw

List of publications (Up to March 2022)

(1) **Vinothkumar, V.**; Sakthivel, R.; Chen, S.-M. Rare Earth Dysprosium Nickelate Nanospheres for the Selective Electrochemical Detection of Antipsychotic Drug Perphenazine in Biological Samples. *Mater. Today Chem.*, **2022**, (Impact Factor: **8.30**), In Press.

(2) Pandiyan R.*****; **Vinothkumar, V.***; Chen, T.-W.; Chen, S.-M.; Abinaya, M.; Rwei, S.-P. Synthesis of Ag@ZrO_2 Nanoparticles: A Sensitive Electrochemical Sensor for Determination of Antibiotic Drug Tinidazole. *Int. J. Electrochem. Sci.* **2022**. (Impact Factor: **1.76**), (*****Equal contributions), In Press.

(3) **Vinothkumar, V.**; Koventhan, C.; Chen, S.-M.; Huang, Y.-F. A Facile Development of Rare Earth Neodymium Nickelate Nanoparticles for Selective Electrochemical Determination of Antipsychotic Drug Prochlorperazine. *J. Ind. Eng. Chem.* **2022**. https://doi.org/https://doi.org/10.1016/j.jiec.2022.02.008. (Impact Factor: **6.06**)

(4) Koventhan, C.; **Vinothkumar, V.**; Chen, S.-M. Rational Design of Manganese Oxide/Tin Oxide Hybrid Nanocomposite Based Electrochemical Sensor for Detection of Prochlorperazine (Antipsychotic Drug). *Microchem. J.* **2022**. 107082. https://doi.org/10.1016/j.microc.2021.107082. (Impact Factor: **4.82**)

(5) **Vinothkumar, V.**; Kesavan, G.; Chen, S.-M. Graphitic Carbon Nitride Nanosheets Incorporated with Polypyrrole Nanocomposite: A Sensitive Metal-Free Electrocatalyst for Determination of Antibiotic Drug Nitrofurantoin. *Colloids Surfaces A Physicochem. Eng. Asp.* **2021**. 127433. https://doi.org/10.1016/j.colsurfa.2021.127433. (Impact Factor: **4.53**)

(6) Veerakumar, P.; **Vinothkumar, V.**; Chen, S.; Arumugam, S.; Lin, K.-C. Ultrafine Rhenium-Ruthenium Nanoparticles Decorated on Functionalized Carbon Nanotubes for Simultaneous Determination of Antibiotic (Nitrofurantoin) and Anti-Testosterone (Flutamide) Drugs†. *J. Mater. Chem. C* **2021**. https://doi.org/10.1039/D1TC02885E. (Impact Factor: **7.39**)

(7) Manjula, N.*****; **Vinothkumar, V.***; Chen, S.-M. Synthesis and Characterization of Iron-

Cobalt Oxide/Polypyrrole Nanocomposite: An Electrochemical Sensing Platform of Anti-Prostate Cancer Drug Flutamide in Human Urine and Serum Samples. *Colloids Surfaces A Physicochem. Eng. Asp.* **2021**, 127367. https://doi.org/10.1016/j.colsurfa.2021.127367. (Impact Factor: **4.53**) (*****Equal contributions)

(8) Koventhan, C.; **Vinothkumar, V.**; Chen, S.-M.; Veerakumar, P.; Lin, K.-C. Polyol-Assisted Synthesis of Spinel-Type Magnesium Cobalt Oxide Nanochains for Voltammetric Determination of the Antipsychotic Drug Thioridazine. *J. Electroanal. Chem.* **2021**, 115600. https://doi.org/10.1016/j.jelechem.2021.115600. (Impact Factor: **4.46**)

(9) **Vinothkumar, V.**; Sakthivel, R.; Chen, S.-M.; Abinaya, M.; Kubendhiran, S. Facile Synthesis of Alpha-Phase Strontium Pyrophosphate Incorporated with Polypyrrole Composite for the Electrochemical Detection of Antipsychotic Drug Chlorpromazine. *J. Alloys Compd.* **2021**, 161537. https://doi.org/10.1016/j.jallcom.2021.161537. (Impact Factor: **5.31**)

(10) **Vinothkumar, V.**; Koventhan, C.; Chen, S.-M.; Abinaya, M.; Kesavan, G.; Sengottuvelan, N. Preparation of Three Dimensional Flower-like Cobalt Phosphate as Dual Functional Electrocatalyst for Flavonoids Sensing and Supercapacitor Applications. *Ceram. Int.* **2021**. https://doi.org/10.1016/j.ceramint.2021.07.140. (Impact Factor: **4.52**)

(11) **Vinothkumar, V.**; Kesavan, G.; Chen, S.-M. Highly Selective Voltammetric Detection of Antipsychotic Drug Thioridazine Hydrochloride Based on NiO@Gd_2O_3 Modified Screen Printed Carbon Electrode. *J. Electroanal. Chem.* **2021**, 115535. https://doi.org/https://doi.org/10.1016/j.jelechem.2021.115535. (Impact Factor: **4.46**)

(12) **Vinothkumar, V.**; Abinaya, M.; Chen, S.-M. Ultrasonic Assisted Preparation of $CoMoO_4$ Nanoparticles Modified Electrochemical Sensor for Chloramphenicol Determination. *J. Solid State Chem.* **2021**, *302*, 122392. https://doi.org/10.1016/j.jssc.2021.122392. (Impact Factor: **3.49**)

(13) **Vinothkumar, V.**; Abinaya, M.; Chen, S.-M.; Sethupathi, V.; Muthuraj, V. Ultrasound Assisted Synthesis of Silver Titanate for the Differential Pulse Voltammetric Determination of Antibiotic Drug Metronidazole. *Phys. E Low-dimensional Syst. Nanostructures* **2021**, *134*, 114865. https://doi.org/10.1016/j.physe.2021.114865. (Impact Factor: **3.38**)

(14) Chelliah, K.; **Vinothkumar, V.**; Chen, S.-M. Development of Electrochemical Sensor Based on Cobalt Oxide/Tin Oxide Composite for Determination of Antibiotic Drug Ornidazole. *New J. Chem.* **2021**. https://doi.org/10.1039/D1NJ01345A. (Impact Factor: **3.59**)

(15) Veerakumar, P.; Sangili, A.; Chen, S.-M.; **Vinothkumar, V.**; Balu, S.; Hung, S.-T.; Lin, K.-C. Zinc and Sulfur Codoped Iron Oxide Nanocubes Anchored on Carbon Nanotubes for the Detection of Antitubercular Drug Isoniazid. *ACS Appl. Nano Mater.* **2021**, *4* (5), 4562–

4575. https://doi.org/10.1021/acsanm.1c00172. (Impact Factor: **5.09**)

(16) **Vinothkumar, V.**; Koventhan, C.; Chen, S.-M. Facile One-Step Synthesis of Ni@CeO_2 Nanoparticles Towards High Performance Voltammetric Sensing of Antipsychotic Drug Trifluoperazine. *J. Alloys Compd.* **2021**, 160682. https://doi.org/10.1016/j.jallcom.2021.160682. (Impact Factor: **5.31**)

(17) **Vinothkumar, V.**; Sangili, A.; Chen, S.-M.; Abinaya, M. Additive-Free Synthesis of $BiVO_4$ Microspheres as an Electrochemical Sensor for Determination of Antituberculosis Drug Rifampicin. *Colloids Surfaces A Physicochem. Eng. Asp.* **2021**, *624*, 126849. https://doi.org/10.1016/j.jssc.2021.122392. (Impact Factor: **4.53**)

(18) Kesavan, G.; **Vinothkumar, V.**; Chen, S.-M.; Thangadurai, T. D. Construction of Metal-Free Oxygen-Doped Graphitic Carbon Nitride as an Electrochemical Sensing Platform for Determination of Antimicrobial Drug Metronidazole. *Appl. Surf. Sci.* **2021**, *556*, 149814. https://doi.org/10.1016/j.apsusc.2021.149814. (Impact Factor: **6.7**)

(19) Kesavan, G.*****; **Vinothkumar, V.***; Chen, S.-M. Sonochemical Synthesis of Copper Vanadate Nanoparticles for the Highly Selective Voltammetric Detection of Antibiotic Drug Ornidazole. *J. Alloys Compd.* **2021**, *867*, 159019. https://doi.org/10.1016/j.jallcom.2021.159019. (Impact Factor: **5.31**) (*****Equal contributions)

(20) Kesavan, G.; Gopi, P. K.; Chen, S.-M.; **Vinothkumar, V.** Iron Vanadate Nanoparticles Supported on Boron Nitride Nanocomposite: Electrochemical Detection of Antipsychotic Drug Chlorpromazine. *J. Electroanal. Chem.* **2021**, *882*, 114982. https://doi.org/10.1016/j.jelechem.2021.114982. (Impact Factor: **4.46**)

(21) Sangili, A.; **Vinothkumar, V.**; Chen, S.-M.; Veerakumar, P.; Lin, K.-C. Efficient and Green Synthesis of Silver Nanocomposite Using Guar Gum for Voltammetric Determination of Diphenylamine. *J. Mater. Sci. Mater. Electron.* **2021**, *32* (1), 1289–1302. https://doi.org/10.1007/s10854-020-04902-6. (Impact Factor: **2.47**)

(22) Sangili, A.*****; **Vinothkumar, V.***; Chen, S. M.; Veerakumar, P.; Chang, C. W.; Panneer Muthuselvam, I.; Lin, K. C. Highly Selective Voltammetric Sensor for l -Tryptophan Using Composite-Modified Electrode Composed of $CuSn(OH)_6$ Microsphere Decorated on Reduced Graphene Oxide. *J. Phys. Chem. C* **2020**, *124* (47), 25821–25834. https://doi.org/10.1021/acs.jpcc.0c07197. (Impact Factor: **4.12**) (*****Equal contributions)

(23) Sangili, A.*****; **Vinothkumar, V.***; Chen, S. M.; Veerakumar, P.; Lin, K. C. Gold Nanoparticle Embedded on a Reduced Graphene Oxide/ Polypyrrole Nanocomposite: Voltammetric Sensing of Furazolidone and Flutamide. *Langmuir* **2020**, *36* (46), 13949–13962. https://doi.org/10.1021/acs.langmuir.0c02448. (Impact Factor: **3.88**) (*****Equal contributions)

(24) **Vinothkumar, V.**; Sangili, A.; Chen, S. M.; Veerakumar, P.; Lin, K. C. Sr-Doped NiO_3

Nanorods Synthesized by a Simple Sonochemical Method as Excellent Materials for Voltammetric Determination of Quercetin. *New J. Chem.* **2020**, *44* (7), 2821–2832. https://doi.org/10.1039/c9nj05660b. (Impact Factor: **3.59**)

(25) Manjula, N.; **Vinothkumar, V.**; Chen, S.-M.; Sangili, A. Simultaneous and Sensitive Detection of Dopamine and Uric Acid Based on Cobalt Oxide-Decorated Graphene Oxide Composite. *J. Mater. Sci. Mater. Electron.* **2020**, *31* (15), 12595–12607. https://doi.org/10.1007/s10854-020-03810-z. (Impact Factor: **2.47**)

(26) Koventhan, C.; **Vinothkumar, V.**; Chen, S. M.; Sangili, A. Highly Sensitive Electrode Materials for the Voltammetric Determination of Nitrofurantoin Based on Zinc Cobaltate Nanosheets. *New J. Chem.* **2020**, *44* (28), 12036–12047. https://doi.org/10.1039/d0nj01796e. (Impact Factor: **3.59**)

(27) Koventhan, C.; **Vinothkumar, V.**; Chen, S.-M.; Chen, T.-W.; Sangili, A.; Pandi, K.; Sethupathi, V. Efficient Hydrothermal Synthesis of Flake-Like Molybdenum Disulfide for Selective Electrochemical Detection of Metol in Water Real Samples. *Int. J. Electrochem. Sci* **2020**, *15*, 7390–7406. https://doi.org/10.20964/2020.08.43. (Impact Factor: **1.76**)

(28) **Vinothkumar, V.**; Sangili, A.; Chen, S.-M.; Chen, T.-W.; Abinaya, M.; Sethupathi, V. Voltammetric Determination of Sudan I by Using Bi_2WO_6 Nanosheets Modified Glassy Carbon Electrode. *Int. J. Electrochem. Sci* **2020**, *15*, 2414–2429. https://doi.org/10.20964/2020.03.08. (Impact Factor: **1.76**)

Cumulative impact factor (as per JCR) = **121.64**

Average impact factor of 28 publications = **4.34**

h-index = **7**

i10-index = **4**

Total citations (Google Scholar) = **131**

List of under review/submitted papers

(1) Kesavan, G.; **Vinothkumar, V.**; Chen, S.-M.; Thangadurai, T. D. Phosphorus-Doped Graphitic Carbon Nitride: A New Metal-Free Electrochemical Antioxidant Quercetin Sensing Catalyst in Fruit samples. *Electrochim. Acta,* **2022**, (Impact Factor: **6.90**), Under Revision.

(2) **Vinothkumar, V.**; Sakthivel, R.; Chen, S.-M.; Abinaya, M.; Kubendhiran, S., Gopu, G. Nanoarchitectured nickel phosphate integrated with graphene oxide for the toxicant diphenylamine detection in food samples. *J Food Compost Anal.,* **2022**, (Impact Factor: **4.55**), Under review.

Conference/Workshop/Seminar

- **International Conference on "Future Healthcare and Economic Development"** was successfully conducted by the Medical Device Innovation Center (MDIC), National Cheng Kung University, Tainan held on 23th – 29th Sep 2021, Taiwan.
- **International Webinar Conference on "Biomaterials and Healthcare Applications"** conducted by Department of Biotechnology, Karunya Institute of Technology and Sciences, Coimbatore held on 28th – 30th May 2020, India.
- **International Conference on "Sensors, Materials and Manufacturing"** was successfully held in Department Chemical Engineering, National Taipei University of Technology, Taipei held on 18th – 20th Nov 2019, Taiwan.
- **International Conference on "Frontier Areas in Chemical Technologies" (FACTs-2019)** Organized by Department of Industrial Chemistry, Alagappa University, Karaikudi held on 26th – 28th July 2019, India.
- **National Seminar on "Frontier Areas in Chemical Technologies" (FACTs-2018)** Organized by Department of Industrial Chemistry, Alagappa University, Karaikudi held on 22nd – 23rd March 2018, India.
- **International Conference on "Frontier Areas in Chemical Technologies" (FACTs-2017)** Organized by Department of Industrial Chemistry, Alagappa University, Karaikudi held on 06th – 08th July 2017, India.
- **National Workshop on "White Led for 21 Century Lighting Systems"** Organized by Department of Chemistry, Thiagarajar College, Madurai held on 09th Mar 2017, India.
- **Two Days Workshop on "New Vistas in chemical Research"** Organized by Department of Chemistry, Central University of Tamil Nadu, Thanjavur held on 17th & 18th Feb 2017, India.
- **National Workshop on "Material Chemistry for Future Industrial Development (MATCH FIND-2017)"** Organized by Department of Industrial Chemistry, Alagappa University, Karaikudi held on 06th & 07th Jan 2017, India.
- **State-Level One Day Seminar on "Chemistry"** Organized by Department of Chemistry, Government Arts College (Autonomous), Salem held on 19th Feb 2016, India.

Hobbies & interests

- Reading Books
- Playing Games (Cricket & volley ball)
- Cooking

- Travelling longtime

Personal information

Name	: **Vinothkumar Venkatachalam**
Father's Name	: Venkatachalam Bommanaikkar
Mother's Name	: Ratha Venkatachalam
Date of Birth	: 07th May 1996
Gender	: Male
Marital status	: Single
Nationality	: Indian
Language	: English, Tamil & Telugu

Reference(s)

1. Dr. Shen-Ming Chen (Ph.D. Advisor)
Lifetime Distinguished Professor,
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2. Dr. N. Sengottuvelan (M.Sc. Advisor)
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3. Dr. G. Gopu (Mentor)
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