PERSONAL INFORMATION

Narendra Kurra, Ph.D.

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https://scholar.google.com/citations?user=GkreFaEAAAAJ&hl=en
Citations: 1949; H-index: 24; *i* 10-index: 38, #Publications:45

RESEARCH EXPERIENCE
Nanomaterials & Energy storage

09/2019-present

Research Assistant Professor
A.J. Drexel Nanomaterials Institute
Dept. of Materials Science & engineering
Drexel University, PA, USA
Project: “Developing robust electrode materials for multivalent metal ion charge storage”

11/2015–09/2019

Postdoctoral Research Associate
P. I.: Prof. Yury Gogotsi

Dept. of Materials Science & Engineering,
Drexel University, PA, USA
Project Title: "***Two-dimensional transition metal carbides (*MXenes*) for Electrochemical Energy Storage****”*

06/2014–06/2015

SABIC Postdoctoral Fellow
P. I.: Prof. Husam Alshareef

Division of Materials Science & Engineering,
King Abdullah University of Science and Technology (KAUST), KSA
Project Title: "***On-Chip Energy Storage****”*

10/2013–06/2014

Postdoctoral Research Associate
P. I.: Prof. Husam Alshareef

Division of Materials Science & Engineering,
King Abdullah University of Science and Technology (KAUST), KSA
Project Title: "***Conducting polymer-based Energy Storage****”*

EDUCATION AND TRAINING

8/2008–9/2013

PhD (Materials Science)
Chemistry & Physics of Materials Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India.

Thesis Title: "***2D Nanocarbons: Functional aspects and Device Fabrication***"

7/2010–11/2010

Visiting Research Scholar

Birck Nanotechnology Centre, Purdue University, USA

Project Title: "***Charge Storage in Mesoscopic Graphitic Islands***"

1/2008–5/2008

Master of Science (Physical Chemistry)

School of Chemistry, University of Hyderabad, Hyderabad, India

Thesis Title: "***Investigations on Optical Properties of Room Temperature Ionic Liquids***"

8/2006–6/2008

Master of Science (Chemistry)

CGPA: 8.6 out of 10 (topper of the batch)

University of Hyderabad, Hyderabad, India

6/2003–5/2006

Bachelor of Science (Mathematics, Physics & Chemistry)

Distinction (94%)

Sri Chundi Ranganayakulu College, Chilakaluripet, Guntur, India

6/2001–4/2003

Intermediate Education (Mathematics, Physics & Chemistry)

Distinction (95.6%)

Chaitanya Junior College, Chilakaluripet, Guntur, India

ACADEMIC ACHIEVEMENTS

Honours and Awards

1. Recognised as one of the highly cited authors at Drexel university for the year 2018
2. Won the prestigious SABIC Postdoctoral Fellowship award for the year 2014-2015 at KAUST.
3. Selected after a preliminary screening followed by personal interview, including group discussion in 2008, and awarded the **Doctoral fellowship** of the International NRW Graduate School of Chemistry (GSC-MS) in WWU Münster, Germany. – *denied the offer.*
4. Qualified for the National Eligibility Test (NET) **in top 5%** for Junior Research Fellowship (**JRF**) in June 2008 conducted jointly by the Council of Scientific and Industrial Research (CSIR) and University Grants Commission (UGC).
5. Qualified for **GATE** (Graduate Aptitude Test in Engineering) conducted by Indian Institute of Technology (IIT)-Delhi in 2008 (**All India 64th Rank, percentile of 99%**).
6. Selected for PhD programme at the top Indian institutes, TATA Institute of Fundamental Research (TIFR) and Indian Institute of Science (IISc) – *denied the offers.*
7. Selected as an **Academic Council member** by the Vice Chancellor of University of Hyderabad (during the academic year 2007-2008).
8. Awarded **Achiever Award, gold medal for being topper of 2006-2008 MS batch by School of chemistry,** University of Hyderabad.
9. Secured **All India 3rd rank** in the entrance exam followed by personal interview, for admission into Master of Science in Chemistry in 2006 conducted by University of Hyderabad (**UoH**), India.
10. Secured **All India 10th rank** in the entrance exam for admission into Master of Science in Chemistry in 2006 conducted by Pondicherry Central University (**PCU**), India.
11. Secured **All India 12th rank** in the entrance exam for admission into Master of Science in Chemistry in 2006 conducted by Banaras Hindu University (**BHU**), India.
12. Won the **Gold medal** in 2006 for the highest marks achieved in Bachelor of Science from the Sri

Chundi Ranganayakulu College, India.

13. Awarded **performance-based scholarship for the topper of the batch** and all mandatory tuition fees were waived in Bachelor of Science.

LIST OF PUBLICATIONS

1. Ameer Al-Temimy, Babak Anasori, Katherine A Mazzio, Florian Kronast, Mykola Seredych, **Narendra Kurra**, Mohamad-Assaad Mawass, Simone Raoux, Yury Gogotsi, Tristan Petit, Journal of Physical Chemistry C (I. F. 4.309), 2020, 124, 5079.
2. Jun Tang, Tyler S. Mathis, **Narendra Kurra**, Asia Sarycheva, Xu Xiao, Mohamed Hedhili, Qiu Jiang, Husam N. Alshareef, Baomin Xu, Feng Pan and Yury Gogotsi, Angewandte Chemie (I. F. 13.32), 2019, 58, 17849.
3. Tyler S. Mathis, **Narendra Kurra**, Xuehang Wang, David Pinto, Patrice Simon and Yury Gogotsi "Energy Storage Data Reporting in Perspective-Guidelines for Interpreting the Performance of Electrochemical energy Storage Systems" Advanced Energy Materials (I. F. 24.844), 2019, 9, 1902007.
4. Qiu Jiang, **Narendra Kurra**, Kathleen Maleski, Yongjiu Lei,Hanfeng Liang, Yizhou Zhang, Yury Gogotsi, and Husam N. Alshareef "On-chip MXene Microsupercapacitors for AC-line Filtering Applications" Advanced Energy Materials (I. F. 24.844), 2019, 9, 1901061.
5. Jianmin Li, Ariana Levitt, **Narendra Kurra**, Kevin Juan, Natalia Noriega, Xu Xiao, Xuehang Wang, Hongzhi Wang, Husam N Alshareef, Yury Gogotsi "MXene-conducting polymer electrochromic microsupercapacitors" Energy Storage Materials (I. F. 13.31), 2019, 20, 455.
6. Mykola Seredych, Christopher Eugene Shuck, David Pinto, Mohamed Alhabeb, Eliot Precetti, Grayson Deysher, Babak Anasori, **Narendra Kurra**, Yury Gogotsi, "High- "Temperature Behavior and Surface Chemistry of Carbide MXenes Studied by Thermal Analysis" Chemistry of Materials (I. F. 10.159), 2019, 31, 3324.
7. **Narendra Kurra*,** Qiu Jiang, Pranati Nayak, and H. N. Alshareef "Laser-Derived Graphene: A Three-Dimensional Printed Graphene Electrode and its Emerging Applications" Nano Today (I. F. 17.476), 2019, 24, 81-102.
8. J Li, **Narendra Kurra**, M Seredych, X Meng, H Wang, Y Gogotsi "Bipolar carbide-carbon high voltage aqueous lithium-ion capacitors" Nano Energy (I. F. 13.12), 2019, 56, 151.
9. Evan Quain, Tyler S. Mathis, **Narendra Kurra**, Kathleen Maleski, Katherine L. Van Aken, Mohamed Alhabeb, Husam N. Alshareef, and Yury Gogotsi "Direct Writing of Additive-Free MXene-in-Water for Electronics and Energy Storage" Advanced Material Technologies (I. F. 4.78), 2019, 4, 1800256.
10. **Narendra Kurra**, M. Alhabeb, K. Maleski, C. -H. Wang, Husam N. Alshareef, and Yury Gogotsi "Bistacked Titanium Carbide (MXene) Anodes for Hybrid Sodium-Ion Capacitors" ACS Energy Letters, (I. F. 16.331), 2018, 3, 2094.

11. Pol Salles, Evan Quain, **Narendra Kurra**, Asia Sarycheva and Yury Gogotsi "Automated Scalpel Patterning of Solution Processed Thin Films for Fabrication of Transparent MXene Microsupercapacitors" Small, (I. F. 9.598), 2018, 14, 1802864.
12. Chueh-Han Wang, **Narendra Kurra**, Mohamed Alhabeb, Jeng-Kuei Chang, Husam N. Alshareef and Yury Gogotsi "Titanium Carbide (MXene) as Current Collector for Lithium-Ion Battery" ACS Omega, 2018, 3, 12489.
13. Fan Zhang, Eman Alhajji, Yongjiu Lei, **Narendra Kurra***, and H. N. Alshareef, "Highly Doped 3D Graphene Na-Ion Battery Anode by Laser Scribing Polyimide Films in Nitrogen Ambient", Advanced Energy Materials (I. F. 24.844), 2018, 8, 1800353.
14. C. Couly, M. Alhabeb, K. L. Van Aken, **Narendra Kurra**, L. Gomes, A. M. Navarro-Suárez, Babak Anasori, Husam N. Alshareef, Yury Gogotsi "Asymmetric flexible MXene-reduced graphene oxide microsupercapacitor" Advanced Electronic Materials (I. F. 4.19), 2018, 4, 1700339.
15. Qiu Jiang, **Narendra Kurra**, Mohamed Alhabeb, Yury Gogotsi, and H. N. Alshareef, "All-Pseudocapacitive MXene-Ruthenium oxide Asymmetric Supercapacitors", Advanced Energy Materials (I. F. 24.844), 2018, 8, 1703043.
16. Pranati Nayak[+], Qiu Jiang[+], **Narendra Kurra**[+], Xinbing Wang, Ulrich Buckner and H. N. Alshareef "Monolithic Laser Scribed Graphene Scaffold with Atomic Layer Deposited Platinum for Hydrogen Evolution Reaction" J. Mater. Chem. A (I. F. 9.93), 2017, ,**5**, 20422-20427
17. Qiu Jiang, **Narendra Kurra**, Chuan Xia, and H. N. Alshareef "Hybrid Microsupercapacitors with Vertically-Scaled 3D Current Collectors Fabricated using a Simple Cut-and-Transfer Strategy" Advanced Energy Materials (I. F. 24.844), 2017, 7, 1601257.
18. You-Yu Peng, Bilen Akuzum, **Narendra Kurra**, Meng-Qiang Zhao, Mohamed Alhabeb, Babak Anasori, Emin Caglan Kumbur, Husam N. Alshareef, Ming-Der Ger, Yury Gogotsi "All-MXene ($Ti_3C_2T_x$) Solid-State Microsupercapacitors for On-Chip Energy Storage" Energy & Environmental Science (I. F. 33.250), 2016, 9, 2847-2854.
19. **Narendra Kurra**, Bilal Ahmed, Yury Gogotsi, and H. N. Alshareef "MXene-on-Paper Co-Planar Microsupercapacitors" Advanced Energy Materials (I. F. 24.844), 2016, 6, 1601372.
20. Pranati Nayak, **Narendra Kurra**, Chuan Xia and H. N. Alshareef, "Highly Efficient Laser Scribed Graphene Electrodes for On-chip Electrochemical Sensing Applications" Advanced Electronic Materials (I. F. 4.19), 2016, 2, 1600185.
21. **Narendra Kurra**, Qiu Jiang, Ahad Syed, Chuan Xia and H. N. Alshareef "Frequency Response of Conducting Polymer Microsupercapacitors Matching that of Electrolytic Capacitors", ACS Appl. Mater. Interfaces (I. F. 8.097), 2016, 8, 12748.
22. Sarath Kumar[+], **Narendra Kurra**[+], and H. N. Alshareef "Enhanced high temperature thermoelectric response of sulphuric acid treated poly (3, 4-ethylenedioxythiophene): poly (4-styrenesulfonate) polymer thin films", J. Mater. Chem. C (I. F. 5.976), 2016, 4, 215 [[+] Equal contribution].
23. Qiu Jiang[+], **Narendra Kurra**[+], and H. N. Alshareef "Marker Pen Lithography for Flexible and Curvilinear on-Chip Energy Storage", Advanced Functional Materials (I. F. 13.325), 2015, 25, 4976. [[+] Equal contribution].
24. **Narendra Kurra**, Qiu Jiang and H. N. Alshareef "A General Strategy for the Fabrication of High Performance Microsupercapacitors", Nano Energy (I. F. 13.12), 2015, 16, 1.

25. **Narendra Kurra**, Chuan Xia and H. N. Alshareef "Ternary chalcogenide micro-pseudocapacitors for on-chip energy storage", Chem Comm (I. F. 6.3), 2015, 51, 10494.

26. **Narendra Kurra**, M. K. Hota, and H. N. Alshareef "Conducting Polymer Micro-Supercapacitors for Flexible Energy Storage and Frequency Response" 2015, Nano Energy (I. F. 13.12), 13, 500.

27. **Narendra Kurra**, Ruiqi Wang, and H. N. Alshareef "All Conducting Polymer Electrodes for Asymmetric Flexible Solid-State Supercapacitors", 2015, J. Mater. Chem. A (I. F. 9.93) 2015, 3, 7368.

28. Jihoon Park, **Narendra Kurra**, Mahmoud Almadhoun, Ihab Odeh and Husam N Alshareef "A Two-Step Annealing Process for Enhancing the Ferroelectric Properties of poly(vinylidene fluoride) (PVDF) Devices", J. Mater. Chem. C (I. F. 5.976), 2015, **3**, 2366.

29. **Narendra Kurra**, Nuha A. Alhebshi, and H. N. Alshareef "Microfabricated pseudocapacitors using $Ni(OH)_2$ electrodes exhibit remarkable volumetric capacitance and energy density", Advanced Energy Materials (I. F. 24.844), 2015, 4, 1401303.

30. **Narendra Kurra**, Jihoon Park and H. N. Alshareef "A conducting polymer nucleation scheme for efficient solid-state supercapacitors on paper", J. Mater. Chem. A (I. F. 9.93), 2014, 2, 17058-17065.

31. **Narendra Kurra**, S. Kiruthika, and G. U. Kulkarni "Solution processed sun baked electrodes for flexible supercapacitors" RSC Advances (I. F. 2.936), 2014, 4, 20281-20289.

32. **Narendra Kurra**, Ronald G Reifenberger and G. U. Kulkarni "Nanocarbon-SPM Synergy: Fundamental Aspects to Nanoscale Devices" ACS Applied Materials & Interfaces (I. F. 8.097), 2014, 6, 6147–6163.

33. U. Mogera, **Narendra Kurra**, R. Dhanya, Chandrabhas Narayana, and G. U. Kulkarni "Low cost, rapid synthesis of graphene on Ni: An efficient barrier for corrosion and thermal oxidation" Carbon (I. F. 7.082), 2014, 78, 384-391.

34. T. Gowthami, **Narendra Kurra** and G. Raina "Interaction and dynamics of ambient water adlayers on graphite probed using AFM voltage nanolithography and electrostatic force microscopy" Nanotechnology (I. F. 3.44), 2014, 25, 155304.

35. **Narendra Kurra*** "Tunable Atomic force microscopy bias lithography on Electron beam induced carbonaceous platforms" AIP Advances (I. F. 1.56), 2013, 3, 092108.

36. **Narendra Kurra** and G. U. Kulkarni "Pencil-on-paper:Electronic devices", Lab Chip (I. F. 6), 2013, 13, 2866-2873.

37. **Narendra Kurra**, Dipanwita Dutta, and G. U. Kulkarni "Field effect transistors and RC filters from pencil-trace on paper" Physical Chemistry Chemical Physics (I. F. 4.12), 2013, 15, 8367.

38. **Narendra Kurra**, Venkata Srinu Bhadram, Chandrabhas Narayana, and G. U. Kulkarni "Few layer graphene to graphitic films: Infrared photoconductive versus bolometric response" Nanoscale (I. F. 7.367) 2013, 5, 381.

39. **Narendra Kurra**, Venkata Srinu Bhadram, Chandrabhas Narayana, and G. U. Kulkarni "Nanocrystalline graphene: Field effect transistors and Infrared photodetectors" Nanotechnology (I. F. 3.44) 2012, 23, 425301.

(Research highlight on this article appeared in Nanotech web 2012)

40. **Narendra Kurra**, Venkata Srinu Bhadram, Chandrabhas Narayana, and G. U. Kulkarni "Field-Effect Transistors Based on Thermally Treated Electron Beam-Induced Carbonaceous Patterns" ACS Applied Materials & Interfaces (I. F. 8.097) 2012, 4, 1030.

41. **Narendra Kurra**, Abhay A. Sagade, and G. U. Kulkarni "Ultrafast Direct Ablative Patterning of HOPG by Single laser pulses to produce graphene ribbons" Advanced Functional Materials (I. F. 13.325) 2011, 21, 3836.

(Research highlights on this article appeared in Materials view, Nature India, 2011)

42. **Narendra Kurra**, Gyan Prakash, S Basavaraja, Timothy S Fisher, G. U. Kulkarni and Ronald G Reifenberger "Charge storage in mesoscopic graphitic islands fabricated using AFM bias lithography" Nanotechnology (I. F. 3.44) 2011, 22, 245302.

(Research highlights on this article appeared in Nanotech web and Nature India, 2011)

43. **Narendra Kurra**, T. Vijaykumar, and G. U. Kulkarni "CNT Manipulation: Inserting a Carbonaceous Dielectric Layer Beneath Using Electron Beam Induced Deposition" J. Nanosci. Nanotech. (I. F. 0.321) 2011, 11, 1025.
44. K. D. Mallikarjuna Rao, T. Bhuvana, B. Radha, **Narendra Kurra** and G. U. Kulkarni "Metallic conduction in NiS_2 nanocrystalline structures" J. Phys. Chem. C (I. F. 4.484) 2011, 21, 10462.
45. T. Vijaykumar, **Narendra Kurra** and G. U. Kulkarni "Electron beam induced carbonaceous deposition as a local dielectric for CNT circuits" Int. J. Nanosci. (I. F. 1.2) 2011, 10, 935.
46. **Narendra Kurra**, Adina Scott, and Giridhar U. Kulkarni "Electrocondensation and Evaporation of Attoliter Water Droplets: Direct Visualization Using Atomic Force Microscopy" Nano Research (I. F. 8) 2010, 3, 307.

[*Corresponding author, +Equal contribution]

PATENTS FILED

1. **Graphene ribbons and methods for their preparation and use.**

Narendra Kurra, Abhay A Sagade and G. U. Kulkarni, **US patent, Application No.**: **US 13/599,810 (20140065359 A1):**

2. **A Process For Synthesis of Graphene**

U. Mogera, **Narendra Kurra**, and G. U. Kulkarni, **Indian Patent Application No. 2713/CHE/2014.**

3. Jihoon Park, **Narendra Kurra**, Mahmoud Almadhoun, Ihab Odeh and Husam N Alshareef "A Two-Step Annealing Process for Enhancing the Ferroelectric Properties of poly(vinylidene fluoride) (PVDF) Devices", SABIC Patent, Saudi Arabia.

4. Pol Salles, **Narendra Kurra**, and Yury Gogotsi "Automated Scalpel Patterning of Solution Processed Thin Films for Fabrication of Transparent MXene Microsupercapacitors" US patent, Pending.