Nicholas Domingo Ignacio
Graduate Research Assistant

Materials Science and Engineering Program and Texas Materials Institute

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Research Interests

- Integration of 2D materials in PCM and RRAM for neuromorphic computing
- Crystalline-crystalline phase transformations for multilevel PCM.
- Scanning transmission electron microscopy and scanning tunnelling microscopy (STM superuser at TMI)
- Materials science pedagogy

Education

08/2021 – current: Ph.D. Candidate (advisor Prof. Deji Akinwande) Materials Science and Engineering Program and Texas Materials Institute, University of Texas at Austin, Austin, USA

01/2020 – 06/2020: Visiting Student through Materials Exchange Program, University of Oxford, Oxford, UK

08/2017 – 06/2021: S.B. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, USA

Awards, Honors & Certificates

06/2023: Inclusive Classrooms Leadership, Division of Diversity and Community Engagement, University of Texas at Austin

02/2023: K-12 Outreach Certificate, CDCM MRSEC, University of Texas at Austin

12/2022: Professional Development Award, University of Texas at Austin

08/2021: Virginia and Ernest Cockrell, Jr. Fellow, University of Texas at Austin

08/2021: T. W. Whaley, Jr. Scholarship, University of Texas at Austin

Professional Activities

Publications

In Preparation: M. Floto*, **N. D. Ignacio***, R. Ciufo, D. Akinwande, C.B. Mullins, Hydrogen-Induced Surface Reconstruction of Co(poly) Studied by STM

Prepress: **N. D. Ignacio**, J. Fatheema, Y. Jeon, D. Akinwande, Air-stable atomically encapsulated crystalline-crystalline phase transitions in In_2Se_3, *Adv Elec Matr (2023)* **Submitted.**

2023:

Y. Huang*, Y. Gu*, S. Mohan, A. Dolocan, **N. D. Ignacio**, S. Kutagulla, K. Matthews, A. Londoño-Calderon, Y.-F Chang, Y.-C. Chen, J. Warner, M.T. Pettes, J.C. Lee, D. Akinwande, Reliability improvement and effective switching model of thin-film MoS_2 memristors**,** *Adv Funct Mater* (2023)

***** *Denotes equal contribution*

Conferences

Posters

11/2022: **"Control of Crystalline-Crystalline Phase Changes in In2Se3 by Encapsulation",** Materials Research Society (MRS) Fall 2022 Meeting, (Boston, Ma, USA)

06/2022: **"Hydrogen-Induced Surface Reconstruction of Co(poly) Studied by STM",** 82nd PEC Meeting 2022, (Chicago, IL, USA)

Member

Materials Research Society (MRS)
American Physics Society (APS)

Teaching Experience

Introduction to Astronomy (AST301), Department of Astronomy, University of Texas at Austin (Spring 2023)

Materials Engineering (ME334), Department of Mechanical Engineering, University of Texas at Austin (Summer 2022)

Introduction to Solid-State Chemistry (3.091), Department of Materials Science and Engineering, MIT, (Fall 2019)

Service & Outreach

09/2022 – current: Cockrell School of Engineering DEI board member

02/2022 – current:	K-12 STEM outreach through UT MRSEC in local elementary schools
08/2021 – current:	MIT Education Councilor (Interview prospective undergraduates)
08/2020 – 06/2022:	First year associate advisor
08/2020 – 06/2022:	Undergraduate associate advising steering committee member
06/2020 – 06/2022:	Department Representative on DEI board of MIT Undergraduate Association
08/2020 – 06/2021:	Vice President of Society of Undergraduate Materials Scientists at MIT
08/2018 – 08/2021:	Department of Materials Science Freshmen Pre-orientation program mentor and coordinator

Last Updated July 2023