NANO-Technology Graduate Program

Sergio O. Martínez, School of Engineering and Sciences

Tecnológico de Monterrey

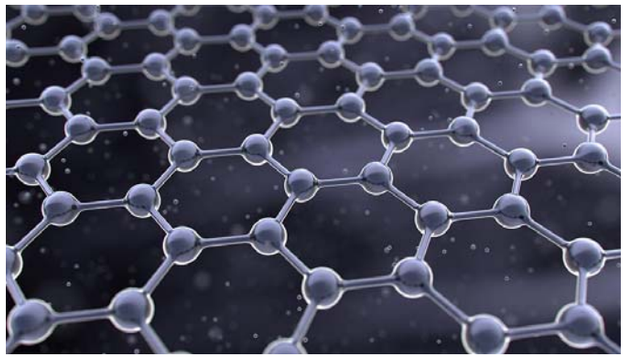
MNT-DNT

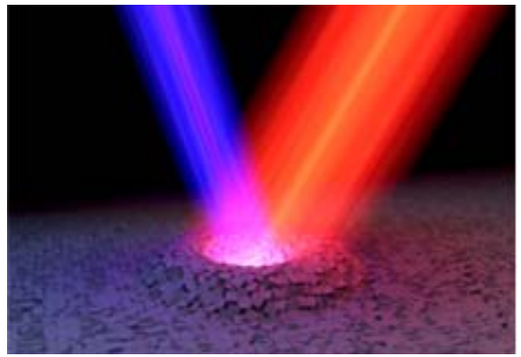
Started in Aug 2017

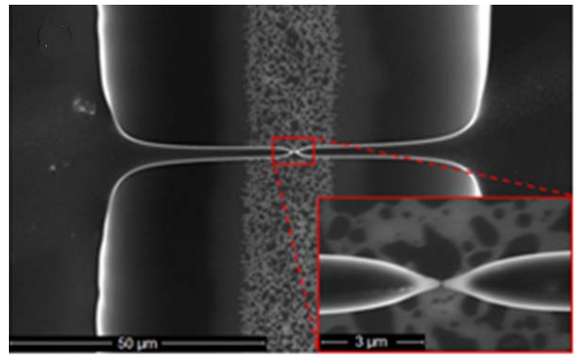
National Program, PNPC-CONACYT

Three Avenues: Nanomaterials, Nanophotonics, Nanosystems

Three Avenues supported by National Research Groups







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Tecnológico de Monterrey

Faculty

53 Members

50 SNI Members

- **29** Nanomaterials
- **16** Nanosystems
- **8** Nanophotonics

Students

79 Regular students

24/55 DNT/MNT

19 MNTs graduated

4 MNTs still working in their thesis without scholarship

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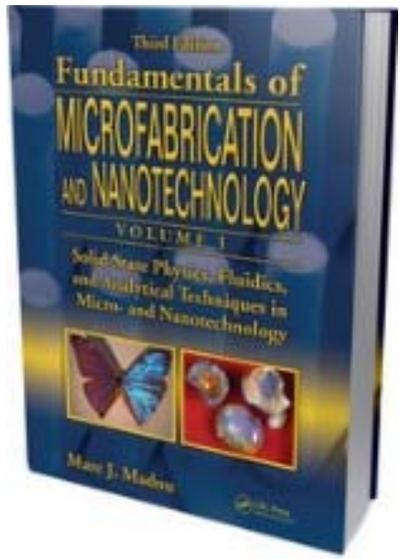
Marc J. Madou

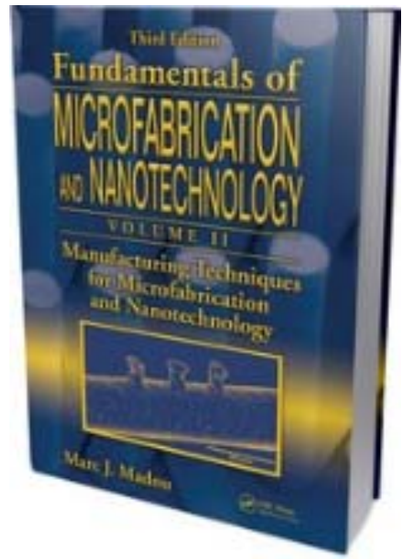
Chancellor's Professor, UCI Samueli School of Engineering
Department of Mechanical and Aerospace Engineering
University of California, Irvine

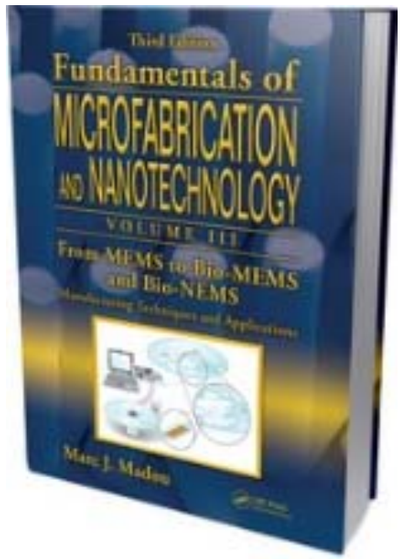
Tec.Nano Strategy Director at Tec de Monterrey

Carbon-MEMS

CD-Microfluidics







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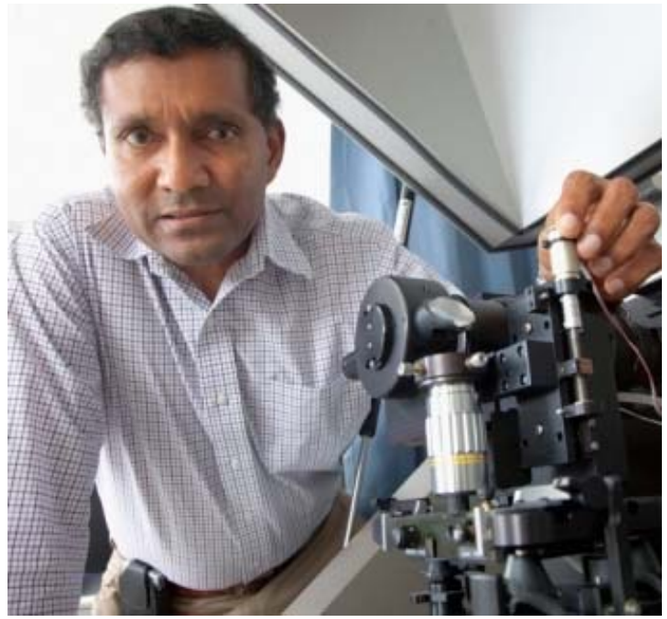
ENDOWED RESEARCH CHAIR

Federico Baur

Nanoscopy **Biosensors**



Prof. Kumar Wickramasinghe

International Program

	MNT	DNT	TOTAL
MEX	46	13	59
IRA	2	6	8
COL	2	2	4
BOL	2	0	2
ECU	1	1	2
ARG/ITA	1	0	1
IND	1	0	1
PAK	0	1	1
VTN	0	1	1
TOTAL	55	24	79

	MNT	DNT	TOTAL
MEX	46	13	59
Other Countries	9	11	21
% Other Counries	16.4%	45.8%	26.6%

Basic Info of the Programs

- MNT is a two-year Program
- DNT is a three/four-year Program
- Both MNT and DNT are offered in two campuses: Monterrey (MTY) and Mexico City (CEM)
- MNT is a 13-course program
- DNT is a Research-based program
- All courses are National, some of them offered by MTY professors and some others by CEM professors
- All courses are offered in English

MNT Program

	SEMESTER 1							
		C	L	U	MOD	AD	FJ	
F4005	Mathematical Physical Modeling	3	0	12	NAC	x	x	
GI5000	Research and Innovation Methods	1.5	0	6	NAC	x	x	
CS4015	Applied Computing	3	0	12	NAC	x	x	
OP4000	Core/Leadership Course	1.5	0	6	NAC	x	x	
				36				
	SEMESTER 2							
		C	L	U	MOD	AD	FJ	
IN4027	Data Science and Statistical Inference	3	0	12	NAC	x	x	
NT5011	Thesis I	3	0	12	LOC	x	x	
Q4001	Thermodynamics of Materials	3	0	12	NAC	x	x	
				36				
	SEMESTER 3							
		C	L	U	MOD	AD	FJ	
NT5012	Thesis II	3	0	12	LOC	x	x	
OP5042	Elective I	3	0	12	NAC	5	6	
OP5043	Elective II	3	0	12	NAC	5	6	
				36				
	SEMESTRER 4							
		C	L	U	MOD	AD	FJ	
NT5013	Thesis III	3	0	12	LOC	x	x	
OP5044	Elective III	3	0	12	NAC	5	6	
OP5045	Elective IV	3	0	12	NAC	5	6	
				36				

	Core/Leadership Courses	C	L	U	MOD	AD	FJ
DS4000	Leadership for Sustainable Development	1.5	0	6	NAC	x	x
GI4000	Leadership for Business Innovation	1.5	0	6	NAC	x	x
	Elective Courses	C	L	U	MOD	AD	FJ
F5011	Quantum Optics	3	0	12	NAC		
F5012	Quantum Computation	3	0	12	NAC	x	
F5013	Spintronics	3	0	12	NAC		
F5014	Nanophotonics	3	0	12	NAC	x	
M5037	Computational Materials Design	3	0	12	NAC		
M5051	Surface Engineering	3	0	12	NAC	x	
NT5001	Microfluidics	3	0	12	NAC	x	
NT5002	Nanobiotechnology	3	0	12	NAC	x	
NT5003	Nanobiocatalyis	3	0	12	NAC		x
NT5004	Nanobiomaterials	3	0	12	NAC		x
TE5000	Microsystems	3	0	12	NAC		
M5035	Nanostructured Materials	3	0	12	NAC		x
M5052	Characterization of Materials	3	0	12	NAC		x
M5031	Smart Materials	3	0	12	NAC		
TE5014	Electrochemistry	3	0	12	NAC		x
F5015	Electromagnetic Fields	3	0	12	NAC		x

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DNT Program

- **Research-based Program**
- **Among the graduation requirements:** Publication of two JCR Q1/Q2 paper
- **Type of Courses:** Research Seminars, Research Workshops, Guided Research, Integrated Exam, Research Proposal, Proposal Defense, Doctoral Research, Scientific Product, Defense

Deadlines

Applicants joining the program in AUGUST 2020

Deadline for reception of electronic documents – Friday, June 12, 2020.
Notification of admission – Friday, Jul 10, 2020.
Beginning of classes – Monday, August 10, 2020.

Applicants joining the program in FEBRUARY 2021

Deadline for reception of electronic documents – Friday, December 13, 2019.
Notification of admission – Friday, January 10, 2020.
Beginning of classes – Monday, February 8, 2021.

International Students

International students are suggested to submit their applications by May 1 2020 (AUG 2020), or by Nov 1 2020 (FEB 2021).

Admission Requirements

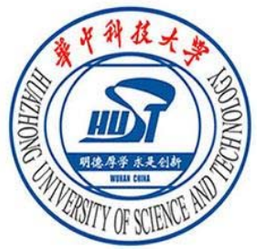
- **Application format.** Available on line at:
- **Passport**. Main page.
- **Curriculum Vitae**. Please include contact info so a video-interview can be set.
- **Previous studies**. Bachelor and Master Degrees certificates and transcripts.
- **PAEP** or **GRE test**. Accepted minimum scores are 585 (PAEP); or 157 for Quantitative Reasoning and 3.5 for Analytical Writing (GRE).
- **Recommendation letters**. Three recommendation letters from academics.
- **Motivations essay**. A two-page essay.
- **English Proficiency**. Minimum requested scores are 550 for TOEFL paper, 79 for TOEFL IBT, 213 for TOEFL CBT, 6.5 for IELT and C1 for CEFR.
- **On-site or Remote Interview**

https://maestriasydiplomados.tec.mx/admisiones

Scholarships

- All students admitted to our Program get full-tuition scholarship from Monterrey Tec.
- All students admitted to our Program are eligible to get the CONACYT living expenses Scholarship.
- Both tuition scholarships from Monterrey Tec and Living expenses scholarships from CONACYT are available for Mexican and well as for International Students.
- Additional financial support might be available from CONACYT to support short research stays in other institutions outside of Mexico. This is mainly feasible for PhD students.

Collaborations



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Co-tutelle

Micro and Nanofabrication Summer Workshop

Tec.Nano – International Conference in Nanotechnology

Annual Conference organized in Monterrey Tec

Started in 2018

Joint effort between the Undergraduate and Graduate Programs in Nanotechnology, and the Research Office of the School of Engineering

Tec.Nano 2018, 28-30 Nov

- 200 participants

Tec. Nano 2019, 21-23 Oct

- 5th Carbon MEMS International Workshop
- 1st Health for the Billions Workshop
- https://www.tec-nano.com/