

## Contact

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## Research Interests

Multifunctional  
Materials,  
Magneto-electricity,  
Flexoelectricity,  
Homogenization,  
Molecular Dynamics,  
Biophysics.

## Relevant Coursework

Computational  
Modeling of Materials,  
Statistical Mechanics,  
Theory of Elasticity,  
Methods of Applied  
Mathematics (I-II),  
Mechanics and  
Physics of Biological  
Cells,  
Variational Methods in  
Mechanics,  
Finite Elasticity,  
Future Faculty  
program (PhD  
Students Professional  
Development Class).  
**GPA: 3.852**

# Sana Krichen

Doctoral candidate

## Education

2013 - Present **Doctor of Philosophy in Mechanical Engineering** [University of Houston](#)  
My doctoral work involves the investigation of magnetoelectricity in soft materials, flexoelectricity and electromechanical coupling, homogenization of composites and the use of molecular dynamics to investigate drug-cell interactions.

## Publications

- S. Krichen, L. Liu, P. Sharma, **The origins of magneto-electric effects in softs materials**, *in submission*.
- S. Krichen, L. Liu, P. Sharma, **Effective elastic properties of heterogeneous membranes**, *in submission*.
- S. Krichen, P. Sharma, **Flexoelectricity: a perspective on an unusual electromechanical coupling**, *invited paper (Journal of Applied Mechanics)*.
- S. Krichen, M. Zelisko, P. Sharma, **Toxicity implications of long-term Ibuprofen treatment on biological cells**, *in preparation*.

## Conference presentations

- Dec, 2015 **International Conference on Advances in Mechanical Engineering and Mechanics** [Tunisia](#)  
(Scheduled) Modification of the Helfrich Hamiltonian in the presence of proteins and implications for the statistical mechanics of membranes.
- Nov, 2015 **ASME 2015 International Mechanical Engineering Congress and Exposition** [Houston](#)  
(Scheduled) Modification of the Helfrich Hamiltonian in the presence of proteins and implications for the statistical mechanics of membranes.
- Oct, 2015 **SES Conference** [Texas A&M University](#)  
(Scheduled) Magneto-electric effects on membranes.
- Jun, 2015 **MacMat 2015** [Seattle](#)  
Modification of the Helfrich Hamiltonian in the presence of proteins and implications for the statistical mechanics of membranes.
- Dec, 2014 **ASME 2014 International Mechanical Engineering Congress and Exposition** [Montreal](#)  
Interaction between lipid bilayer rafts and their stability.

## Fellowship and academic achievements

2015	<b>ABS Award</b> <i>Selected among graduate students for superlative performance and enormous leadership potential.</i>	Dept. of Mech. Eng. at UH
2015	<b>CAMAC Scholarship</b> <i>Awarded to African students based on performance.</i>	UH Foundation
2015	<b>McMAT 2015-NSF Travel Award</b> <i>Awarded to winners of the poster competition.</i>	McMAT Conference
2014	<b>ASME Student travel Award</b> <i>Awarded to winners of the poster competition.</i>	ASME Conference
2014	<b>TPEG</b> <i>Awarded to selected international students.</i>	UH
2014	<b>CAMAC Scholarship</b> <i>Awarded to African students based on performance.</i>	UH Foundation
2014	<b>AMOCO Minority Scholarship</b> <i>Awarded to minority PhD engineering students.</i>	UH Foundation
2013	<b>Presidential Fellowship</b> <i>University fellowship awarded for 2 years to selected graduate students.</i>	College of Engineering at UH
2009	<b>Undergraduate Fellowship</b> <i>School fellowship awarded for 3 years to undergraduate students.</i>	Tunisia Polytechnic School

## Responsibilities and outreach

Fall 2015	<b>Instructor</b> Since 2014, I joined the future faculty program offered by the department of mechanical engineering. The program aims at preparing graduate students to become successful educators and researchers at top engineering schools and industry. I am currently teaching Computing for Mechanical Engineers to a class of 240 students.	Dept. of Mech. Eng. at UH
2013-2014	<b>Teaching Assistant</b> For two courses: Mechanics I and Numerical Methods.	Dept. of Mech. Eng. at UH
2014 - Present	<b>Society of Women Engineers member</b>	SWE

## Skills

**Programming:** *Mathematica, Matlab, C, SGBD/SQL.*

**Software:** *Gromacs, Lammmps, VMD, Packmol, AutoCad, Latex, MS Office, SPSS, Eviews, R, Mac-OS.*

**Multilingual:** *English, French, Arabic.*