

congratulations
class of 2014

**My master's at ASU
has been challenging.
Today I want to thank
my family and friends
for keeping me going.
Thank you Amma and
Nanna, I'm a graduate! :)**

Sailaja A.

**Mom, Dad, Poly, Mahdi &
Grandma Phyllis, Thank
you all so much for
your unconditional love,
support & guidance. I
love you all very much.
God Bless!**

Shams A.



I would like to thank everyone who helped me go through this chapter of my life. Thank you Dad, Mom, Uncles, classmates, Mike Sever, and friends.

Abedalaziz A.



**A big thanks to all
my friends and family
who supported me
throughout college.
Come and get a hug!**

Antonio A.

“”

**I am what I am today
because of my parents
and husband. I am so
glad they are here today
to see this. For with me,
they also graduate!**

Tejal Dnyanadev A.



Dear Mom and Dad, I thank you for providing me these two years to enjoy my life to the fullest and learn a great deal of things.

Rishi A.



**Thank you Brynn,
Elizabeth, Mom, Dad,
Jake, and the rest of
my family for your love
and encouragement as
I pursued my graduate
degree!**

Matthew A.



Thanks to my family and everyone who supported me these last four years!

Nafisah A.

“”

**Thank you to my family
and friends who helped
me graduate. I did
this for my beautiful
daughter Ayesha! Yay!
What's next?**

Monib A.



**To my family and friends
thank you for your love
and support. This is for
you**

Ahmad A.

“”

My deepest thanks go to my loving family, for without them I could not imagine coming thus far. Thank you everyone for coming out to support me!

Taosif A.



**Great four years. Great
people. Thank you ASU.**

Abdulaziz Adeeb A.

“”

**Thanks Mom and Dad
for always believing in
me! I made it!**

David A.

“”

Ira A. Fulton
SCHOOLS of
ENGINEERING

Ira A. Fulton Schools
of Engineering
Maroon

0730



John

Rohan

Prad

Wes

arizona state university

code ic b

Gracias a mi familia por todo su apoyo y amor, en especial a mis papas por haberme dado la mejor educación del mundo, en casa.

Manuel A.

“”

**To my family, you all
have made it possible
for me to be standing
here today, not just as a
young adult, but as an
successful young adult.
Thank you.**

Joshua A.



I thank my family for their mental support during these four years. Also, I thank ARAMCO for their financial support through this scholarship.

Ibrahim A.



**Special thanks goes to
my father and family for
the support.
Thanks a lot!**

Mohammed A.



**I am thankful for my
parents, my siblings,
and my loyal friends
for being there for me.
Without their help I
would not be standing
here today.**

Ismaeel A.



**A big thank you to all
my family members and
to my brothers here in
Tempe! Shukraan!**

Khaled A.

“”

**My feelings today are
indescribable. Special
thanks to my family who
traveled overseas just
to attend this ceremony.
Thanks Mum and Dad.**

Amzan A.



**I would like to thank
everyone who supported
me and stood by me.
I especially thank my
family, friends and
professors. Thank you.**

Danah A.



I wouldn't just say thank you all for what you did for me, I would thank God for having all of you in my life. I love you & I appreciate having you.

Israa A.

“”

**Thank you Abdulrahman
Alsubhi. Thank you
Mariah Omran. In fact,
there is nothing that I
can do to thank
you enough!**

Zyad A.

“”

**All the thanks is not
enough for my parents.
I would say something
more valuable than
thank you for them
because they supported
me to be here.**

Mohammed A.





share your victory
#asugrad

**Thank you to my family!
You have been my
greatest support system
throughout college,
especially my dad
who has been my
greatest inspiration.**

Maria A.



**Thank you to all of those
that believed in me
and that made this day
happen. This is only the
first step... this one is for
you brother, enjoy it!**

Mixael A.

“”

**Thank you Aai and Baba
for everything!!!**

Pranjal A.

“”

Mom and Dad, thank you for everything you have done. I wouldn't be the man I am today without your guidance and support. I love you.

Tyler A.



**Thanks Mom and Dad
for putting me through
college and the rest of
my family for coming
down for my graduation!**

Vineel A.

“”



**Thanks to my family for
all your support!**

Paul A.

“”

**Mom, thank you
for giving me every
opportunity to succeed.
It means more than you
know. I love you
very much.**

Melissa Elizabeth A.



Thanks ASU for giving me a wonderful, fun-filled educational experience. Thank you, Amma, Appa and Anna. Couldn't have done it without you!

Siddharth A.



**Thank you Mom and
Dad for having your
trust in me.**

Karan A.

“”

**A big thank you to my
mom, dad, sister, and all
my friends and family
who have supported
and encouraged me
throughout this journey!
Love you all!**

Shruthi B.



Thank you Mom & Dad.

Paromita B.



**Thank you to my family. I
could not have done this
without you guys.
I love you!**

Ethan B.

“”

**To my sweet family,
thank you for your
inspiration and support!
Cole, thanks for
sharing mommy.**

Michelle B.

“”

Thank you God

Sai Prasanna B.



I would like to thank my family, especially my father, mother, brother, and girlfriend Faith for supporting me throughout my college experience.

Jared B.



**I would like to give
a thanks to all my
family and friends who
continue to support me
everyday.**

Jabrille B.

“”

This one is for you Dad!

Roshanbir Jasjitsingh B.

“”

**I thank my parents,
brother and teachers
for all their guidance
and motivation, without
which I could not have
made it here.**

Shashank Sri Ranganath B.



**I dedicate this to my
parents. This is just
a small step towards
journey to space!**

Anandrao B.

“”

**Mom and Dad,
thank you for always
encouraging me to do
my best! I appreciate all
of your love and support!
I am glad you both can
be here today. <3**

Amy B.



Thank you my dear family for always believing in me. You have always been a great support. I love you! :)

Sirisha Ratna Kumari B.





**Thank you Mom, Dad,
Ashley, and Michael for
always being there for
me no matter what.**

Brian B.

“”

It has been a great journey. I am thankful for the support of my wonderful family. The ASU experience will always stay in my heart.

Wasif B.



**Thank you to everyone
who has helped me get
to where I am today.
I wouldn't be here
without all of the
support provided.**

Nicolas B.



**The tassel was worth the
hassle! Dad, Mom, Kelly,
Jill, Grandmas, Grandpas
I DID IT! Thank you for
all your love, support, &
money! Love, Tara Mara**

Tara B.

“”

**ASU offered me a well-
rounded experience!
Thank you to all my
family for your support
throughout my journey! I
love you!**

Luis B.



**Dedicating this degree
to my friends and family!
Thank you for your
support everybody!**

Girish Keshavrao B.

“”

**Thanks for everything
Mom, Dad, & JBO!
Love you more than
you know. Friends,
you guys rock! Bye AZ!
Back to Boston I go!
#rewardforendeavor**

Alexandra B.



**Thank you Michelle,
Lydia, Claire, Spencer
and Hyrum! You all
made this worth it. Now
that I'm done, we're
going to Disneyland!**

Jeffrey B.

“”

I'm fortunate to have had the opportunity to study what I love. There are many people in the world who cannot. With this knowledge I hope to help them

Zachary B.





**graduation
photos**

**flickr.com/photos/
fultonengineering**

**Thank you Becca, Susan,
Charlie for all of your
support and help. I love
you guys and we did it!!**

Stephen B.

“”

Thank you!

Jasmine B.



**Marc, there is no way I
could have completed
this degree without your
love and patient support.
Love, C**

Christel B.

“”

**We made it Candice!
Thank you for all the
support and putting
up with the late hours
working through it all.
I love you!**

Scott B.



**ASU is the best place
to learn.**

Anup B.

“”

**Sun Devil for life.
Arizona is our state. UA
will always be 2nd best.
Give 'em hell Devils!**

Jayson B.

“”

**Thank you to all
my friends and the
TEMPEtations for all the
memories. Thank you
Mom, Dad, and Ryan
for supporting and
believing in me.**

Robert B.





INFORMATICS

Geographic

Digital Culture

Enterprise

Game Design

Geographic Information Systems
Information Analysis Landscape Analysis
Geographic Information Technologies
Quality Control Risk Management
System Engineering
Operations Research
Media Editing
Animation 3D Design
Media Programming
Game Engine Development
Game Art Design
3D Modeling 3D Animation

“Life is and will ever remain an equation incapable of solution, but it contains certain known factors.”

-Nikola Tesla

To my family and friends.

Zoran B.



**Burrows family, thank
you for making the trip
to Arizona to share this
milestone with me! Love
you all, Dave**

David B.

“”

**Shout out to the family,
love you guys! Ron, Jen,
Mike, Mom, Dad. Thank
you for all the support!
Too many friends to
thank, you know who
you are!**

Kenneth B.



Thanks to my family and my ami for being my inspiration. Thanks to my soon-to-be husband for not accepting less than an A+ :)

Laura C.



I want to thank my family for their incredible support throughout my educational career, my graduation would not have been possible without you!

Jesus C.



**Dad, thank you for
always hurting yourself
while trying to fix things.
Your unwavering will has
inspired me to become
an engineer.**

Curt C.



**Thanks Mom, Dad, and
Emma! Your love and
encouragement over
the years was amazing.
Love, Dillon**

Dillon C.



**Thank you mom and
dad for all of the support
throughout my
college experience.**

Matthew C.

“”

Quiero agradecer mi familia por todo el apoyo que me han dado. Los quiero mucho. El futuro no tiene límite!

Ernesto C.



**Amma, Appa & Srivaths,
I am who I am today
because of you guys!
Thanks for being there
for me always.**

Srividhya C.

“”

**Special thanks to my
parents for all of their
love and support.
Definitely couldn't have
done it without your
great advice
and guidance!**

Santhi Priya C.



**Thank you Mom
and Dad for your
continuous support!**

Abhimanyu Jaywantbhai C.



**Thank you to my family
for all your support. I
could not have done it
without you.
Love you, Dad!**

Mark C.

“”

**Thanks to my family.
It is the result of their
blessings and and
support that I am able to
see this day.**

Sachmanik C.



**It's not the destination,
but the journey that
matters most. I'd like to
thank my friends and
family for all the support
over the past few years!**

George C.



**Thanks a lot for
your support.**

Nirosha C.



**Dad, thank you for
making it possible for
me to come to Arizona
State to follow my
dream! You are my
inspiration.
Love, Nolan**

Nolan C.



**Thank you Mom, Dad
and the Almighty for
everything. I dedicate
this achievement to all
my loved ones.**

Venkata Sai Harin C.





**Thank you Aai, Baba, Tai
and Nikhil! Love you :)**

Neha Ashok C.

“”

**I would like to thank
my family for their
unconditional support,
my friends for always
being with me and most
importantly God for all
his blessings**

Sahil C.



I love ASU!
Go WakeDevils!

Chelsea C.



**The journey is finally
over! Thanks for all of
the support, Mom!**

Justin C.

“”

**I want to say thank you
to my entire family for
their support.
I wouldn't be here
without you guys.**

Joshuah C.

“”

**Thank you Mom, Dad,
Steph, Sam, & Nick for
all the love and support
along the way!
Love you guys!**

Daniel C.

“”

**don't forget
to write**

fullcircle.asu.edu
**news for alumni
and friends**

**A special thank
you to my parents,
grandparents, and
friends who are here
to share this transition
into a new and exciting
chapter of my life.**

Aidan C.



Thank you Mom and Dad for the infinite love and support. You guys knew I didn't need kindergarten to make it here! Love you both :)

Chelsea C.



**I would like to thank
my family for all of
their support.**

Aaron C.

“”

**Thank you Mom and
Dad for standing behind
me! Now let's get to
the river!**

Chase D.

“”

**Thank you for all
the support and
encouragement you
have given me to be
successful. I couldn't
have done so well if it
wasn't for my family.**

Werner D.



**My dear wife Siying,
you are the meaning
of my life and you are
the reason why I am
standing here. From
now, I will give you a
better life. I love you.**

Daihong D.



I love you mom!

Ahmed D.

“”

**I could not have done
this without my family.
Thank you for all your
love, support, and
encouragement!
With love, Jordan.**

Jordan D.

“”

Without the help of my family and friends I would have never made it through! So today is for you guys too! Thank you!

Alexandria D.

“”

**Shoutout to everyone
who graduates today.
Keep doin' it big. I'll
see ya'll out there
#SunDevil4lyfe**

Andres D.





**Thank you Sheny,
Marcos, and Sarina for
all your support.**

Ronald D.

“”

Thank you Mom and Dad for always having my back and pushing me to strive to achieve the best. I love you.

Brandon D.



**Happy to be graduating
after 2 great years !!!**

Mihir Jagdip D.

“”

The two years I spent at Arizona State University were fantastic. Being a Sun Devil is an honor for me! I love ASU from the bottom of my heart!

Nishant Snehal D.



Thank you Aai and Papa!

Sunil D.



**Thanks Mom, Dad, and
Ruhi for all the support!
Engineering would have
been impossible without
all your supportive
phone calls!**

Abhishek D.



**Thank you Mom and
Dad for all the support
and encouragement.**

Rohit Ashok D.

“”

**Mom and Dad, thank
you for your love and
support always!
Love you!**

Kulveen D.

“”

Thank you Mom and Dad for all the support and everything you have done to help me get through these four years. All my love, from your son Justin.

Justin D.



**So happy I am one of
the Sun Devils. GO ASU!**

Kang D.

“”

**Thanks Nisha, Ashish,
Archit, Aishwarya for
being with me whenever
I need support.
Thank you all.**

Kanishak D.



**Thank you Mom, Dad,
Kevin, Heather, and
friends for all your
support in getting to this
point! I appreciate all
that you have done for
me!**

Travis D.



**Thank you Rick, Sandi,
Erica, Grandma Ginny
and Grandpa Paul
for being the best
supporters I could ask
for in every aspect
of life.**

Nicholas D.



**For my parents, who
gave me the belief I
could achieve anything
and who never let me
give up!**

Brittany D.

“”

Thank you to my beautiful and loving wife, and all of our family. This wouldn't be possible without your support.

Christopher E.



**Mom, Dad, & Katee:
Thank you for always
supporting me and
encouraging me to chase
my dreams, I couldn't
have done it without you
guys! Love you! Josh**

Joshua E.



**I'd like to personally
thank my Mom for
always being there for
me and being my rock
through thick and thin.
And to my family, thanks
for everything!**

Joshua E.





**Thank you Mom, Dad,
Kate, and everybody
who has supported me
over the last four years!**

Michael E.

“”

**I couldn't have done it
without your love and
support. Thank you! I
love you all so much!**

Francis E.

“”

**Mom and Dad, thanks
for supporting me
both emotionally and
financially throughout
the last 4 years. You've
been the bedrock to my
success. I love you!**

William E.



**Thank you Mom for
supporting me with all
your love! Thank you Dad
for backing me up with
your unknown existence!
Thank you Sneha for
being with me!**

Chetan F.



My four year experience at ASU contains memories and knowledge that will last my lifetime. Thanks Mom, Dad, Stepdad, Sis and Grandparents. Love you!

Kevin F.



**Thank you to my family
for leading the Sun Devil
way, supporting me
over the past 4 years,
and more importantly,
celebrating with me
today! Love you!**

Jill F.



Thanks friends and family for the support through working and going to school. I love you all! Special shout out to Andy for keeping me sane! Love you!

Chelsea F.



**Thank you for the love
and support. Without the
role models I look up to,
this journey would not
have been enjoyable
nor possible.**

Mark F.



**Couldn't have done it
without my engineering
residential community,
my family and friends!
Thank you for all of
the memories and Go
Devils!**

Jennifer F.



**Patty and Tony, thank
you for supporting me
through nearly 6 years at
ASU... even though you
are both UofA grads!
Love, Your favorite
daughter, Megan.**

Megan G.



**Love you Mom and Dad!
Thanks for all your
support.**

Molly G.

“”

**Thank you Mom and
Dad for helping me
make it through these
last four years!
I love you both!**

Tyler G.

“”

**Thank you to my mom
and dad for supporting
me through all of my
schooling. I could
not have done it
without you!**

Nathan G.



**Thanks to my parents,
siblings and especially
my husband for the
support! I hope to see
you 3 go through this
experience soon enough!
Love you guys!**

Carolina G.



Love you Mom and Dad!
ASU Rocks!
Go Sun Devils!

Prasannakumar Prakashrao G.



Thank you for my degree. \$90,392 in 3 years, 8 months, and 25 days. Learned so much from ASU's resources, such as the High Speed Wind Tunnel.

Dalyn G.



I'm grateful for my family and all they have done for me over the years. Their love and motivation has made me the man I am today.

Terry G.





**I'd like to thank my
parents, family, and
friends for all of the
support over the past
four years. I appreciate
all that you have done!**

Ryan G.



**Thank you to Karley,
Taylor, Kolton, Jacob,
and Jason. A special
thank you goes to my
wife. I wouldn't be here
without you. I love you!**

Jonathan G.



**I just wanted to learn!
Thanks for all your
support.**

Bret G.

“”

I would like to thank my family for their support during my college experience. I would not have been able to do it without them.

David G.



To my two little boys Reo and Diego, thank you for your patience and belief in me. Remember Daddy loves you always. Now let's have some fun!

Garrett G.



**Special thanks to my
lovely wife, Leslie! Could
not, and would never
have done this without
your love and support!
Let the change begin!**

Keith G.



(ASU) All Skills Unified!
The above says it all :) A
tight hug to Mom, Dad,
Sis, Grandpa, my lovely
friends and my family for
this special moment.

Gaurang G.



**Para la madre mas
Hermosa Raquel Lopez.
Sin ti esto no hubiera
sido possible. Este gran
reto que se cumple es
por todo tu esfuerzo. Te
amo!**

Eugenio G.



Thank you family and friends for your love and support through the years! Couldn't have done it without you!

Matthew H.



I want to thank all of my family and friends for their support. You guys have made college an amazing experience.

Elliot H.

“”

**Thanks Grandpa, Mom,
Dad, Maggie, and Lizzy!**

Sean H.

“”

**Thank you to my mother,
father, the rest of my
family, and friends for
encouraging me while
pursuing my degree.**

Zachary H.

“”

To all my family. We did it! Thank you for all of your support.

Garrett H.

“”

**Thank you Hasan-
Rahman family for your
love and support these
past four years!**

Salman H.

“”

**Thank you to my wife,
family, and friends for
your support through
college and beyond!**

Adam H.

“”

Mom and Dad, I love you both very much. Thank you so much for all of your support and care over the years and in helping me achieve my dreams.

Shawn H.



**Thanks to the Hayes
family and friends for
supporting me through
this journey! I love you!**

Katie H.

“”

**Thank you Alex, Cyndi,
Tim, and my whole
family for being
so supportive!**

Christina H.

“”

Electrochemical Detection of Estradiol

Victoria Smith
Mentor: Jeffrey M
School of Biological a

Determining the optimal frequency of detection for estradiol and

Background

Over six million women in the United States struggle with becoming or staying pregnant¹. One of the main reasons it is difficult for some couples to conceive is their inability to accurately predict the ovulation period. Ovulation is a response to different hormone concentrations in the blood and occurs at regular intervals; however, these intervals are different for every woman. By mapping out the concentrations of the central hormones—estradiol, progesterone—an accurate timeline can be produced and analyzed.

Materials and Methods

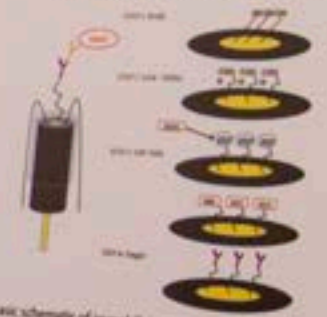


Fig. 1 Basic schematic of immobilizing an antibody onto a gold disk electrode. After the antibody has been immobilized on to the gold disk electrodes surface, a concentration gradient of estradiol was tested from 1pg/mL to 500pg/mL.

Project Goals

The objective of this project is to characterize the biomarker estradiol using electrochemical impedance spectroscopy. This was accomplished by:

1. Immobilizing estradiol's antibody onto the surface of the electrode
2. Creating a concentration gradient of the antigen, estradiol
3. Running EIS experiments which produced impedance data given in Bode and Nyquist plots.
4. Analyzing data to determine the optimal frequency that shows a consistent slope and strong correlation values for all concentration of the target hormone at that frequency.
5. Repeating steps 1-3 with frequency of estradiol for an interference experiment.
- 6.

Estradiol Calibration Curve

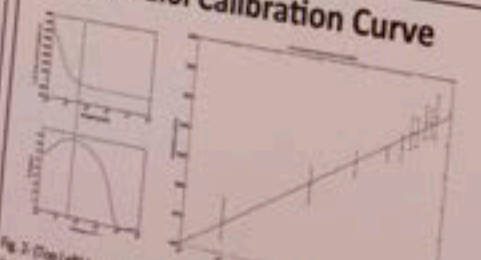


Fig. 2 (Top Left) Nyquist plot...



Thanks, I guess. No but seriously, thanks to my family for always being there for me and providing me their love and support.

Edgil H.

“”

Thank you to all of my friends and family for the continuous support. If it weren't for all of you I would not be in the position I am in today!

Dillon H.



**Thank you to my
exceedingly patient and
loving wife. Please don't
send me back to school
to get me out of
the house.**

Zack H.

“”

Thank you for being the most supportive, loving family a girl could have. I hope to make you proud!

Alyson-Raquel H.

“”

Thank you Mom and Dad for all of your love, support and prayers during my journey to this special day. I would not be here without it. Love you!

Nikou H.



**Thank you for giving me
this opportunity to study
at ASU!**

Ronak H.

“”

I am grateful to my wife, Kelsey, for allowing me to study late into the night, every night, & to my parents/g-parents/bro's for the support.

Trent H.

“”

I love you, Mom!

John H.

“”

**Thank you to my
wonderful family for
supporting me and
always believing in me. I
couldn't have done this
without you. Essayons!**

Catherine H.



I want to thank my family for the support through this degree and especially my wonderful wife for the encouragement to do the best that I can always.

Kenneth H.



**Thanks to my
friends and family
for supporting and
encouraging me
through college.
I really appreciate it!
Love you guys.**

Timothy H.



Love you, Mom!!

Nina I.

“”

**Thank you to all my
family and friends who
have supported me
throughout the years.**

Devin I.

“”

**Thank you Mum and
Dad for everything you
gave me, and for all the
help throughout my
college years.
Love you both!**

Mohammad J.



**I want to thank my mom
for being my constant
supporter and always
being there for me and
also my grandma
and grandpa.**

Austin J.



**To all who have helped
me through the long
sleepless nights
and days in the
engineering library.
Thank you, love Frank.**

Frank J.



**Thank Papa, mama,
hermano and hermana
for your support. Also to
my wife and son Daniel
who motivated me to
continue and never give
up. I love them all.**

Jose J.





ASU engineering
ACADEMICALLY EXCELLENCE
Sander Haggler
Mechanical Engineering

Bio-Inspired Control Learning and...

The goal of this research is to use genetic algorithms to develop a control model for...

Conclusions

- The Microsoft Kinect motion tracking can be employed through Kalman Filter Training.
- Tracking data that the Kinect through the Kalman filter can reduce noise from raw data.
- Accuracy improvements were significantly affected by poor quality RGB data.

Future research:

- Expanded testing of lower limb motion.
- Testing of system for tracking multiple human subjects.
- Train larger sets of high precision data for further improving Kalman filter.
- Train multiple Kinects for same subject.

Sensor data is transformed from local reference systems to global reference system to be compared.

Results:

Following Kalman Filter training we can achieve an error of the Kinect of only 17%. This is a significant improvement.

Robotics and Control Lab

**Thank you Sushil and
Kritiga for coming.
Love you!**

Dwarakesh J.



I am absolutely blessed to have a loving, supportive, and amazing family. Thank you for everything you have done. I love you all very much!

Tate J.



**I would like to thank my
parents, grandparents,
Megha, my guardians
and all my friends in
India and in US for being
there with me always.**

Vani J.



**The coolest experience
at one of the hottest
places. I am a Sun Devil.**

Joel J.

“”

**Thank you to my
friends and family who
supported me through
this long journey...
Love you all!**

James J.



**Mom and Dad, lo
hicimos. Gracias por su
amor y apoyo. Esto es
para ustedes. Ismael
y Valeria, los amo.
Veanette <3**

Veanette J.



**To my parents, fiancée,
family, and friends: Your
encouragement and
support has brought me
here today. I could
not have done it
without you.**

Paul J.



**Thanks Mom, Dad,
and Conor for being
there and supporting
me through my work
towards earning my
engineering degree. I
love you guys!**

Kevin K.



**Thank you Richard and
Nancy Kahn! I love you
sooo much!**

David K.

“”

**Thanks to all my
friends and family
who supported my
during my MS. Finally
it feels wonderful
after graduating (R.I.P.
Studies 1994-2014 ;))**

Shrikant K.



**Thank You Mom and
Dad! For all that you
have done!**

Varadaraj Shastry K.



**Thank you Mom, Dad
and Pradnyot. I Love
you!**

Anupama Hiramani K.

“”

I want to thank my wife for her patience, unconditional support, and encouragement. Special thanks to my beautiful son, Daddy loves you very much.

Uzeir K.



**I thank my parents
for this wonderful
opportunity and all my
friends who were part
this journey.**

Monica K.

“”

Thanks Mom. Good job!

Eric K.

“”



100%

Effect of Microplastics
on the Environment

engineering
tutoring ce

foams and thermoplastic
Alex Walsh, Biomedical Engineering
Melissa Laffelle, Ph.D., Assistant
Professor of Mechanical and Health Systems

ASU Engineering
Alex Walsh

Building Innovative
Building Engineers

...your experience?

...ment and research
... 2015 International and a
... what you can do to support
... 2016. The idea was simple:
... to build a program, establish
... figure. "I am a fan of the



...ment and research
... 2015 International and a
... what you can do to support
... 2016. The idea was simple:
... to build a program, establish
... figure. "I am a fan of the

**Thank you to my
parents for believing in
me and giving me the
opportunity to pursue
graduate studies! Proud
to be a Sun Devil!**

Bhavik Prakash K.



**Thank you to my family
for all the support I have
received throughout the
past 4 years!
Love you all!**

Timothy K.



**Thank you to my
family and friends for
supporting and believing
in me! This day wouldn't
be possible without
you all!**

Michael K.

“”

**I would like to thank
my husband & son,
my sister, my parents,
my friends and ASU's
faculty for your love
and support.**

Jacqueline K.

“”

**Thank you family for
the unwavering love
and support. Without it,
I wouldn't be standing
where I am today.**

Jeffrey K.

“”

**This would not have
been possible without
my parents sacrifice.
Thank you Amma and
Mr. Dad!**

Darshan K.

“”

**Thank you for attending
my convocation. Mum
and Dad, thank you.**

Xuan K.

“”

**Thank you my friends
and family for all
the support.**

Venkata Siva Prasad K.



**Thank you for all of
your support!**

Matthew K.



Special thanks to the Lord Jesus Christ for this degree. I would also like to thank my wife Heather, my kids Evan, Sophia, Lucas & my mother-in-law Linda.

Angelo K.



**I just want to say thank
you to my Mother
because without her,
none of this would be
possible! Thanks Mom,
I love you! :)**

Joseph K.

“”

**Thank you so much to
my loved ones for their
constant support.**

Sean K.

“”

Thank you!

Sujay K.



doopity doop ddop.

Kristy K.

“”

I want to thank my family for all the support they have provided throughout this amazing journey. Thank you guys! I finally did it!

Miguel L.

“”

**Thank you family for all
your support.**

Matthew L.

“”

Effect of Microstructure on Toughness of 3D Printed Specimens

Jonathan Lai, Mechanical Engineer
Mentor: Jay Oswald, Assistant Professor
School for the Engineering of Matter, Transport and Energy

Abstract

The fundamental question that this research seeks to address is how the microstructural features in different specimens contribute to the failure of these specimens. This question will be addressed by comparing the stress concentrations in the models with textured surfaces in experimental tests to determine the most probable sources of material failure.



(a) Scarfed microstructure
This geometry is composed of vertical fibers diverted at 1.7 deg



Maximum principal stress of 10491 at 0.022 ms after impact
This design proved to be the weakest of the three compared.



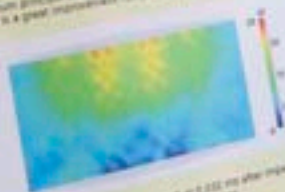
(b) Helix A microstructure
This geometry is composed of helical fibers with 0.5 turns



Maximum principal stress of helix A at 0.020 ms post-impact
There is a great improvement compared to the beam.



(c) Helix B microstructure
This geometry is composed of helical fibers with 1.0 turns



Maximum principal stress of Helix B at 0.022 ms after impact
Compared to its counterpart, it is vastly lower.

**Thank you everyone for
all the love and support
through all my 16 years
of school. Mom and Dad,
your son is a
college graduate!**

Frank L.



**I thank everyone who
have helped me in my
life to get me here today.
I love you all!**

Jacob L.

“”

**Thank you Wendy,
Halmeoni and Hal-abeoji
for all your support and
prayers. Congratulations
Stephanie, we
finished together!**

Karl L.



**Thank you so much for
all of your support and
encouragement. Thank
you Ba Ma! Thank you
O Duong. Thank you Anh
Chi. Thank you Tam.
I love you all!**

Long L.



I love Taiwan!

Chun-Yi L.

“”

**Thanks to my mom and
sister for their loving
support and guidance.
I love you.**

Edith L.

“”

**Thank you to my family,
brothers and friends. It
is thanks to you all that I
have made it this far. As
for tonight, please don't
kill me.**

Armando L.

“”

Thanks for flying half the globe to be with me at this wonderful moment. I love you, Mom.

Written by the boyfriend... and yes, the boyfriend is proud :)

Ming L.

“”

I'd like to thank my wife for being patient and loving, my parents for teaching me hard work, and my other parents for giving me the chance I needed.

Steven L.



**Even after all those
times Dad tried to
convince you to stop,
thanks for still doing my
laundry, Mom.**

Colten L.

“”

**A special thanks to my
parents, Patti and John
Lysiak, for always being
there for me.
I love you both.**

John L.



**Thank you SEMTE,
thank you Mr. Fulton,
thank you ASU, thank
you USA.**

Teng M.

“”

**Being a Sun Devil
is awesome!**

Kishan M.

“”

**Thank you Mom and
Dad for everything!**

Disha Mahesh M.



**Thanks for everything
Mom and Dad! Couldn't
be here without you :)**

Jess M.

“”

**Thank you Mom! Thank
you Dad! Love you!**

Niccolo M.

“”



**To God Almighty,
parents, brother and all
the awesome people I
met in my life!**

Hima Bindu M.

“”

**Thanks for believing in
me folks.**

Vivek M.

“”

**This one is for you, Dad!
Wish you were here
today!**

Ashish M.

“”

**Could not have done
any of this without the
support of my “special”
family and McKinsey, I
love you guys. Go Devils!**

Davenn M.

“”

**I would like to thank my
parents for their support
and encouragement
throughout my life.**

Salman M.

“”

**I want to thank my
parents for their
outstanding support.
I also want to thank
my fiancée, Jacqueline,
for putting up with my
craziness during school.**

Michael M.



**Thank You Mom and
Dad! It would not
have been possible
without you!**

Uday Bharath M.



Thank you Mom and Dad! I wouldn't be here if it wasn't for your support.

Sarah M.



**Thank you BME
department for my
successful four years
and special thanks to Dr.
Caplan and Dr. P., you
made it possible.**

Abhinav M.



**Thank you Mom and
Dad for your constant
support. Love you!**

Nikhil Kenneth M.



**I would like to thank
my loving parents for
providing me with all
the resources necessary
to pursue my academic
goals and endeavors.**

David M.

“”

**Endless gratitude to
my parents! And thanks
to all my friends. One
doesn't go to NASA,
float in zero gravity,
swim with robots, & go
to Antarctica alone!**

Emily M.



**Thank you, Mom
and Dad, for your
support and persistent
dedication to my
success and well-being
throughout my life.**

Alexandre M.

“”

**Glad to be a part of
such fantastic and
prestigious institution.**

Kshitij Kaushik M.

“”

**My family's support
has been crucial to my
success at ASU.
I love you guys!**

Jacob M.

“”



**Thank you Mom, Dad
and Marsha. I could not
have done it without all
of your love and support.**

Yannick M.

“”

Gracias a Dios por permitirme cumplir esta meta que sin su ayuda no lo hubiera logrado, y a mis padres por su apoyo incondicional.

Kevin M.

“”

Thanks to Dr. S & Dr. K!

Peter M.



**Mom, Dad, and Kamryn:
I can't thank you enough
for all the love and
support you have given
me over the years. Love
you guys!**

Jennifer M.



Thanks to my family for supporting me, Allison Farina for guiding me, and Linda Chatten for showing me how the people I meet make my work worthwhile.

John M.



I want to thank my family for giving me this opportunity and my friends who made this journey a memorable one.

Abhineet Mukeshkumar M.



**Thank you Mom, Dad &
Akka for all the support!**

Sam Vineet M.

“”

**In honor of my mother,
Iris Morales, thank you
for your inspiration. To
my family and loved
ones, thank you for your
endless support. I love
you all!**

Seth M.



**Thank you Mom and
Dad for the experiences
and opportunities you
have allowed for me
to have!**

Martin M.



Thank you Mom and Dad for all of your love, support, and inspiration. I couldn't have done it without you!

Raed M.

“”

Mom & Dad, you gave me a great example to follow. Clare, your strength pushed me through. Gma & Gpa, it means the world to me that you are here.

Brian M.



Mom, this is for you!

Aarthy N.

“”

**Thank you to my family,
friends, mentors,
colleagues, professors,
coaches, and advisors
for your constant
support. I wouldn't be
here without you.**

Matthew N.



**For all the
wonderful times!**

Abhilash N.



**Thanks to Yuna, Jiyeon,
Kwanghyun, Kumyi,
Sunmin, Sookja,
Boosaeng, Tei, Grace,
Caitlin. Love you all.
Thank you for your
support.**

Taek Gul N.





share your victory
#asugrad

Thanks Mom and Dad

Rahul N.



Arigatou gozaimashita!

Gitesh Eknath N.



Investigation of Multimodal Tactile Cues for Multidigit Rotational Tasks

Priya Challa, Aerospace Engineering
 Mentor: Dr. Veronica J. Santos, Assistant Professor
 School for Engineering of Matter, Transport and Energy

of exploratory actions to through touch. A similar with robotic hands. The goal the sense of touch to during multidigit rotational This was done by examining a robotic arm and hand multimodal tactile sensors a haptic knob.



Figure 2 - (a) Initial and (b) final grasp positions of the three fingers.



Figure 3 - Location of the digits and their corresponding location of the start of each trial.



Figure 4 - The electrodes were clustered based on their spatial location on the fingertip.

sp. was retHand a haptic finger multimodal Fig. 3-3) on speeds rotational used to es during specifically impedance, related to ation.



Figure 1 - The knob was rotated incrementally by 180 degrees in all of the trials.

Low Resistance, Slow Rotation (30°/sec)

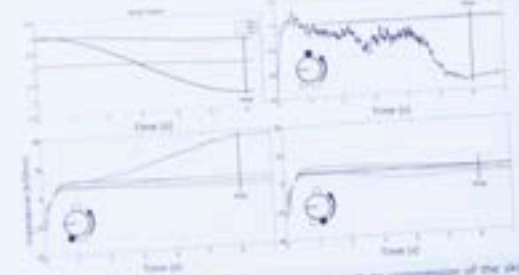


Figure 5 - An increase in electrode impedance corresponds to compression of the skin while a decrease in impedance corresponds to decompression or bulging.

Results

- The majority of the impedance occurred during contact with the radial aspect of the fingertip for 80% of the trials (Fig. 3).
- Variation in rotational impedance was significant (high impedance).
- Variation in rotational impedance can change the amplitude of the response (larger for high impedance).

Future Work

Combinations of tactile sensing (such as vibration) can be used to characterize time tactile feedback control actively response.

Acknowledgments

Special thanks to Dr. Ponce Wong for his support with operations and post processing.

**Thanks Nappas &
Vitaros! xoxo**

Steven, N.

“”

It could not be better.

Rajasekhara Madhusudan N.

“”

**Thank you Mom, Dad,
Priya for being there for
me always. Thank you
Ashwin for being my
rock and supporting me
through thick and thin.
Love you all! <3**

Varsha N.



**We did it! Thank you for
you love and support!
Los quiero y gracias por
todo lo que an hecho
por mi. Love Aggie.**

Agueda N.

“”

**What are we supposed
to do now?**

Rudy N.

“”

**Momma and Nattuuuu,
this is for you!**

Lalita N.

“”

Special thanks to my wife, kids and family who have supported through my efforts to gain a degree at ASU.

Ismaila N.



**Hello friends & family.
I would like to thank
all for your wonderful
support for me to
successfully complete
my master's. Miss you
and love you all!**

Ashwin Krishna N.



**Thank you for all your
love, support, and
inspiration over the past
four years.**

Kyle N.

“”

I would like to thank my family for supporting and staying patient through the major changes and delays. ASU has guided me in the right direction.

Danny N.



**Thank you Mom, Dad,
my fiance John, and my
best friend Aaron for
loving and supporting
me! I wouldn't be where
I am today without you.
I love you !**

Linh N.



Thanks Ma and Pa!

Tanner N.



**Thank you family for all
the support!
Couldn't have done it
without you.**

Kyle N.

“”

**It was an incredible
experience to attend
ASU. I thank my parents,
my boyfriend for being
so supportive and
always being there.
Cheers!**

Nivedita N.





Department of Petroleum & Minerals Engineering
Mechanical Engineering
The research title: Program: OASIS: SMART
A learning-based approach to design

Three groups

- ... and types
- ... integration (either
- design at high conditions)

Figure 1

ASU **engineering**
ARIZONA STATE UNIVERSITY

Jason Trevithick
Mechanical Engineering

Methods for Thermal Energy Storage
Mechanical Engineering
Arizona State University
Tempe, AZ, USA

Methods

- ...
- ...
- ...

Figure 1: A 3D visualization of the ...
Figure 2: A 3D visualization of the ...

**Can't believe I'm already
graduating. Thank you
to all of my family and
friends for all of
your support.**

Ryan O.



**I'm so proud to have
been afforded the
opportunity to learn,
research, and grow at
this great institution.
Forever a Sun Devil!**

Marwan O.



I shook up the world!

James P.

“”

**Thank you Aai and Baba!
It wouldn't have been
possible without your
support! :)**

Jatin P.

“”

**I thank my family, friends
and professors at ASU
for the help and support
they gave me for
two years.**

Karthikeya P.

“”

**Thank you Dad, Mum,
sis and my friends for
always being my support**

Sunitha Suresh P.

“”

**ASU - thank you for
the memories!!**

Aniket Sampat P.



**Thank you Panza and
parents for all of your
support! This day would
not be possible if it
weren't for you!**

Joelle P.



ASU is one of the best things that happened to me. I'm proud to be an ASU grad. Thank you very much Mom and Dad for your support!

Karthik P.



If this message is being shown, it means I'm free. I'm finally free. Time to catch up on 6 years of missed sleep.

Shaun P.

“”

Thank you.

Hee Won P.



**Thank you all for your
support over the last
four years.
I love you all.**

Stephen P.



**Thank you to my family
for their support,
especially my sister,
Shilo, and brothers, Josh
and Alex, and my
friend Meri.**

Roy P.

“”

From the bottom of my heart, I'd like to thank God, my parents, my mentor Dr. Huang, and my wonderful friends! This one's for you!

Trivikram P.



All credit for this great achievement: The doctorate goes to my beloved wife Rumpa who has stood by me through all the ups and downs in my life.

Sanjay P.



ASU was a great learning experience and it was made easy by my family and friends. Thanks a lot to Titiksha, Sailee, Harshada and Shruti for being there.

Aasawari Kailas P.





**Thank you Mom & Dad!
I couldn't have done it
without you!
Love, Austin.**

Austin P.

“”

Thanks to my family, my friends and professors. I wouldn't have such an achievement without your support.

Haojun P.

“”

This has been a long time coming, and each one of you helped make this day possible. Thank you friends and family for your support and encouragement.

Abraham P.



**Thanks to my family for
all of the support.**

John P.

“”

**Thanks for all the love
and support! A new
chapter of life
now begins.**

Pedro P.



**A sincere thank you to
my family, my friends
and energy drinks! This
one is for Madisyn...
never give up on
yourself baby!**

Daren P.

“”

**Thanks Mom and Dad!
You guys were always
there for me! Armin &
Eliza I love you all! I
couldn't have done it
without all of you!**

Zena P.



**Thank you Mom and
Dad for all of the support
over the past four years!**

Gregory P.

“”

Special thanks to my family for their love and support! You are my inspiration, and I love you all very, very much!

Jessica P.

“”

**Being a Sun Devil is
awesome. Thank you
Dad, Mom, Nikki
and Leena for
supporting me.**

Rakesh Reddy P.



**Grazie mille, famiglia
e amici!**

Nicholas P.

“”

**To the Powers/
Cavanaugh/Bates
family... we did it! This
wouldn't have been
possible without your
love and support.
I love you!**

Kelly P.



**A great learning and
challenging experience.
Thanks to my family and
friends for standing by
me through the good
as well as tough times.
Love you all!**

Ashwin Narayan P.



**Thank you, Mom
and Dad for all the
support, inspiration and
guidance. I wouldn't
have been here
without you.**

Arkadeep P.



**Thank you all for
your support and
encouragement over the
years. I couldn't have
done this without you.**

Zachary P.



**Thanks to everyone for
the tremendous support
over these last four
years and as I continue
on to medical school.
I couldn't have done it
without you!**

Jordan P.



**Thank you to Professor
Dai and my family for
being here today and for
their continued support
throughout college!**

Noelle R.





Low Energy Photoreactor System Using Solar Energy
Dr. Tony McWhorter
Department of Chemical Engineering
University of Colorado Boulder

The system consists of a solar panel, a photoreactor, and a collection tank. The solar panel is used to power the photoreactor, which is used to break down pollutants in water. The collection tank is used to collect the treated water.

Future Work
The system will be tested in a real-world setting. The system will be used to treat water in a community water supply.

ASU

**Mom and Dad...
this one's for you!**

Vishnu R.

“”

**Thank you ASU for
giving me the best
college life and an
equally great future.**

Tasnuva R.



**Thank you Mama and
Papa for all your support
and encouragement
from the beginning until
now! I love you Amina,
Hanna, Sanna, and
Hashim!**

Qasim R.



**I owe this degree to you,
Mom, Dad and Arjun!**

Adithya R.

“”

**I will like to thank
my family for all their
support and a shout
out to the brothers of
Lambda Theta Phi, “En
la Unión esta
la Fuerza”**

Jaime R.

“”

**Liz and Cayman, I owe
you both so very, very
much for all the joy you
bring into my life. Thank
you for changing my
life forever.**

Yours, Drewberry

Drew R.



**46 6f 72 20 61 20 67 6f 6f
64 20 74 69 6d 65 20 63
61 6c 6c 20 34 38 30 2d
39 36 35 2d 38 39 37 32**

Matthew R.

“”

**Thanks to my family for
all the support! It has
been a great four years
and I couldn't have
made it here without
you. I love you Mom
and Dad!**

Dan R.



**Thank you for all the
support and love you
have all given me.**

Ismael R.

“”

**Thank you to my family
for your continuous
support and for traveling
to be here for this
moment. Love you!**

Jacelyn R.



**Mom, Dad, and Andrea I
love you. I am blessed to
have you. Thank you.**

Trevor R.

“”

**Couldn't have done it
without you!**

Erin R.

“”

I finally did it! Better late than never! “If you find a path with no obstacles, it probably doesn’t lead anywhere.”

Tyler R.

“”

I want to thank my family for their support and unconditional love. You showed me that with perseverance, all my dreams are possible.

Aldo R.



**Thank you Mom, Dad,
Annette, Rick, family,
and Fuentes family for
all your support.
We did it!**

Edgar R.



**Thank you to all of
my family & friends,
especially my parents &
beautiful girlfriend for
all of your support and
encouragement.
I love you all!**

James R.



I wouldn't be here if it weren't for my family and friends. Thank you for the support and guidance. I love you.

Julie R.

“”



CARBON DIOXIDE SEPARATION BY CERAMIC-CARBONATE DUAL-PHASE MEMBRANES AND PROCESS DESIGN FOR MEMBRANE REACTOR IN IGCC POWER PLANT

Ali Gholizadeh, Chemical Engineering
Advisor: Dr. S. S. Yoon, School of Engineering of Water, Transport, and Energy (SEWTE)

INTRODUCTION

Carbon dioxide (CO₂) capture and separation and phase a process flow diagram for a membrane reactor used in an IGCC power plant.

GOAL

Design a membrane reactor for CO₂ capture and separation and phase a process flow diagram for a membrane reactor used in an IGCC power plant.

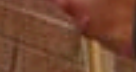
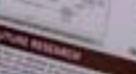
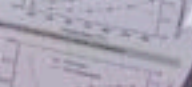
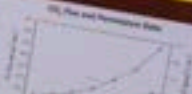
METHOD

Process flow diagram for a membrane reactor used in an IGCC power plant.

BACKGROUND

Carbon dioxide (CO₂) capture and separation and phase a process flow diagram for a membrane reactor used in an IGCC power plant.

RESULTS



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FURI
Future Energy Research

ASU
ARIZONA

**A special thank you
to my Mom, Linda, my
boyfriend, Jon, and
my 3 children Trent,
Trevor and Kate for
their understanding and
patience the past 2 years.**

Tiffany R.



**Thanks for all your
support!**

Austin R.



Thank you friends and family for the support through my college years.

Bryan R.

“”



**graduation
photos**

**flickr.com/photos/
fultonengineering**

**Mom and Dad, you
are both amazing and
have made this college
journey that much easier
with all your support and
encouragement!
I love you!**

Adriana R.



**Thank you Elia Valdivia!
I could not have done it
without all of your love,
support, and late night
snacks delivered to
Noble Library. I love you.**

Jeffrey R.



**I would like to thank
my parents, friends and
extended family for
helping me get this far.
I could not have done it
without your support!
Go Devils!**

Cory R.



**Thank you Mum and
Dad for this
wonderful American
college experience!**

Misharr R.

“”

**Thanks to my husband
and my daughter! I'm
so lucky to have such a
supportive family :).**

Reiko S.

“”

College taught me a lot more than academics... how to succeed in life. Worth every penny I spent on my education at ASU.

Nithish Sairam S.



**I would like to thank
all of my family for
their support, and I'd
like to wish everyone
graduating well in their
career!**

Maria S.

“”

**Great to have you
guys here!**

Mahesh Ramchandra S.

“”

**I will always bleed
maroon and gold.**

Connor S.

“”

**Dear family and friends,
your support means the
world. The best is yet to
come. Love, Ryan.**

Ryan S.

“”

Special thank you to my mother. I wouldn't be where I am today if it wasn't for her support. She is my motivation for success.

Ahmad S.



Thank you to my entire family for supporting me through these four years, helping me obtain knowledge that I will use for my entire life!

Grant S.



After 10 years at ASU I'm finally done!! Thank you to my family and friends, I love you all!!

Garrett S.

“”

**Thank you to my family
for all the support they
provide. And thank
you to everyone who
persuaded me to study
engineering. And lastly,
Go Ducks!**

Brooke S.





**Never back down. Never
surrender the dream!**

Keon S.

“”

**Thank you professors of
ASU and the mentors
of TFC.**

Varun S.

“”

**Thank you for putting
up with me for the
last 2 years! It was a
challenging adventure
and I could not have
done it without you.
Love, Angela.**

Angela S.



**Thank you to my wife
for supporting me. I also
thank you for my boy
who's on the way.**

Jeong-Jin S.

“”

**Thank you for being
there for me. :) You guys
are awesome.**

Meghna Melukote S.

“”

O.M.G I'm a graduate!

Ullas S.

“”

**I want to thank God,
my parents and all my
friends for supporting
me in my journey. You all
made this possible.**

Chhavi S.



Thank you Ma and Papa.

Haripriya S.

“”

**It took courage to be
here, and a lot
of sequins.**

Jamie S.

“”

**Many thanks to my
parents, family, and
friends whose support
made this possible.**

Ashwin S.



**Thank you my father
Mohammed, mother
Afaf, dear wife Zuhail,
Ashraf, son Mohammed
and daughter Yasmin.**

Shereef S.

“”

**Off to grad school!
Chem-E's rule!**

Tyler S.

“”

**Thank you parents,
friends and well wishers
for your never
ending support.**

Akshay S.



**Thanks to Appa, Amma
& Senthil for being the
backbone behind my
success! Special thanks
to my loved ones who
had been my all time
support.**

Pavithra Deepa S.



I would like to thank my Mom, Dad, my sisters and Jija for their ongoing support and for being generous, supportive and inspiring people. ;) :)

Harshal S.



Waheguru babaji!

Shaunjit S.

“”

Thanks to Mom and Dad. I will try and be the person you want me to be. Thanks Bua, Fufaji, Bhabhis, Ranu and Karan.

Piyush S.

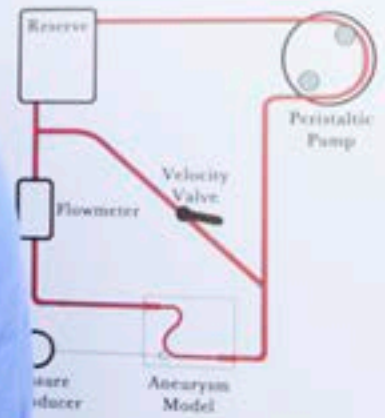
“”

HEMODYNAMIC PROFILING OF ENDOVASCULAR EMBOLIZATION POLYMER TREATMENT OF CEREBRAL ANEURYSMS

Christopher Workman, Biomedical Engineering, Biochemistry
 Mentor: Brent Varnson, Ph.D.
 School of Biological and Health Systems Engineering

How does polymer embolization treatment of cerebral aneurysms affect hemodynamics?

METHODS



All is pumped through the flow circuit shown above. The flow rate is adjusted via the flowmeter. The flowmeter is used to measure the flow rate using a Foster type turbine meter in the flow line. The velocity valve is a pneumatic that generates high a (100) control and subsequent widening in the flowmeter is then used into a model of aneurysm. The flowmeter is connected to a capillary microcatheter into the aneurysm wall.



The physical cerebral aneurysm model was designed to facilitate according to general hemodynamic flow that have been shown to be linked to increased risk of rupture. Such as an elongated dome, dome parent/daughter angle, greater side/parent angle [1].



The CFD model was fabricated using wire rapid prototyping. This wire was fabricated into a circular model as it featured in a 3D. Model velocity. Speeds for wire was used and into the wire model and used to make the transparent polyethylene that model. A non-degradable capillary pressure tap was drilled into the model for pressure measurement.

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ASU engineering
 CHRYSTIAN STATE UNIVERSITY
 Christopher Workman
 Biomedical Engineering

“You’re off to great places! Today is your day! Your mountain is waiting, so get on your way!”- Dr. Seuss. Thanks Mom, Dad, and Nate for the support!

Mary S.

“”

**To Mom, Dad and big
brother. Family and
friends, thanks for
making this happen!**

Aswin S.

“”

I would like to thank my family and friends for helping me achieve this exciting milestone in my life! I could not have done it without all of you!

Joshua S.



**Huge thanks to all
my great friends who
made getting through
engineering bearable
and a special thanks
to Riley. I couldn't have
done it without you.**

Catherine S.



**Thanks Mom, Dad,
and Tina for all of
your support and
understanding during
this journey we call
college. I love you all!
I did it!**

Victoria S.



**Thank you Mom, Dad
and Grandma, I couldn't
have done it
without you.**

Brian S.

“”

**Thousand thanks to my
parents to be their with
me during all my hard
time. I could not thank
you enough for all your
love and support!**

Sachin S.

“”

**I'm extremely grateful
for the faith and support
my family and friends
have given me. I will
always remember all
the things my love ones
have done for me.**

Juan S.



**Hi Mom, Dad, Lauryn,
Maddy, Tyler and Travis!
I made it! Thank you for
your love and support
through the past 4 years!
I love you!**

Abbey S.

“”

Thanks to all of my friends and family who helped me through this dark time. Without them, I'd be sitting down playing video games. Wait, I still am.

Shane S.



**Had a wonderful
experience at ASU.
The two years flew
by! People are very
accommodating here
and the professors are
patient and talented!**

Madhusudan S.



To all of my family and friends, thank you for your continual support and love. Without you, none of this would have been possible.

Nicholas S.



“The cosmos is within us, we are made of star stuff. We are a way for the cosmos to know itself.” - Carl Sagan

Jason S.

“”

**Thanks Mom and Dad
for all your love and
support. Thanks to
Mom-Mom, Pop-Pop,
GMom, Toni and my
family for encouraging
and believing in me.**

Michael S.



**I want to thank
my family for their
continued loving
support. You've always
helped me through life's
great trials. Thank you
for believing in me!**

Brandon S.



Thank you to my lovely wife, Sonya, and to Aliya and Levi, and to Mom and Dad, for all of your support throughout my degree. I love you!

Stephen S.

“”

ASU has been a learning curve and has helped me forge new bonds. I would like to thank my family and friends for all the support. I love you all.

Venkat Varun Shreyas, S.



**Mom, today your
son graduates with a
master's degree. Thanks
for everything.**

Shriram Surya S.

“”

Many thanks!

Tianwei S.



Thanks Mom and Dad!

Bo S.

“”

I dedicate my master's degree to my Dad, Mom, brother and friends. Thank you for all the support and encouragement.

Yamuna S.



**Hi Amma and Appa, I
said I would get a 4.0 but
I was very, very close!
Thank you for constantly
supporting me.
Best, Athul.**

Athul S.



**Thank you Mom, Dad
and sister for all of
your love, support, and
inspiration. I would not
be here without it.**

Goutam T.



**Thanks for your support,
Mom, Dad, & Toni!**

Catherine T.

“”

**Thank you, friends and
family for everything!
Love you guys!**

Kyle T.

“”

ASU is wow!

Rahulkumar T.

“”

**Thank you Mumma and
Papa! Love you!**

Arpit T.

“”



What makes an
engineer
curiosity
creativity
perseverance
collaboration
communication
problem-solving
attention to detail
analytical thinking
teamwork
leadership
innovation
adaptability
continuous learning
resilience
time management
organization
critical thinking
decision-making
risk-taking
emotional intelligence
ethical judgment
social skills
technical proficiency
ASU

**Thank you Mike and Joy
Theis for putting up with
my college years from
Wisconsin to Arizona. I
assure you I did in fact
study a little. Love John**

John T.



**A huge shout out to
all my friends and
family who supported
me through the years!
Y'all are pretty stinkin'
awesome.**

Alec T.



**Thank you Mom, Dad,
and Jessa for supporting
me throughout my
undergrad years at ASU.
I love you all!
Go Devils!**

Jonah T.



**Thanks for all the
support, Mom and Dad!
I love you! Shout out to
Team Alpha Dog!**

Kevin T.

“”

**don't forget
to write**

fullcircle.asu.edu
**news for alumni
and friends**

**Thank you Al-Thwaini
and Al-khalifah families
for your love and
support. I love you Mom!**

Talal T.

“”

**Thank you to everyone
to helped me get to this
point. Especially my
family, Mom, Dad and
fiance. I wouldn't be
here without you!**

Samantha T.



I'm so excited to start my career! Thank you to my family & loved ones, especially my parents, who supported me through everything. Love you all! :)

Genevieve T.



**I finally got my degree!
It only took seven years,
one wedding, and one
house to get it. Thank
you for supporting
me everybody!
I love my wife!**

Matthew T.



**I thank my parents
Tulegen and Nailya,
and my brother Mirat
for continuous support
during my education.**

Askhat T.

“”

**I would like to thank my
beloved husband, in-
laws, parents, siblings
and friends for all your
support and prayers.
Love you all. Thank you!**

Taniya T.



**So long, and thanks for
all the fish.**

Vivie T.

“”



**A huge thank you goes
to all my family and
friends who supported
me throughout this time
in school, especially
Amanda, I love you!**

Alan T.



**Thank you to all my
family and friends
for your support
throughout my college
educational years.**

Jace T.

“”

**Mom and Dad, thank
you for the abundance
of love, guidance and
support you have given
me. I couldn't have done
it without you.
Love, Shannon.**

Shannon T.



**Thank you to Mom
(Barbara Urena), Dad
(Blas Urena), Mike
and my Grandmothers
(Frances McGimpsey
and Maria Minguez) for
all the love and support.**

Barbara U.



Love you Mom and Dad!

Michael V.



Thank you Mom for everything you've done to allow me to reach my dreams. I couldn't have done it without you, my family, or my loving girlfriend.

Christopher V.



**Gracias a toda mi familia
por todo lo que han
hecho por mi! Los amo!**

Joselyn V.

“”

Sincere gratitude to my Mom and Dad for getting me to this level. Gratitude to my life coach Sri Sri for teaching me the ways of life. Love you guys :)

Jitesh V.



**I thank my parents
for supporting me in
achieving this degree.
Mom and Dad, this is
for you.**

Vimarsh V.

“”

**Hoy se cumple uno de
nuestros sueños, gracias
a su apoyo, fe y amor.
Gracias por siempre
estar conmigo en este
camino. Gracias familia!
Gracias Papas!**

Jose V.



**Heartfelt thanks to my
Mom, Dad, Pavi, JK
and my close friends
Vishwas & Kaushik for
all your support.
Trust me. I have a
master's degree!!**

Vignesh V.



I thank my Mom and Dad for being with me today to witness the event and supporting me all through these years. You are everything to me!

Rakesh V.



To Mom, Dad and Anuroop, thank you for your support and encouragement. I wouldn't have been able to do it without you all.

Sai Sampat Apuroop V.



**I would like to thank my family for all the support I've received through my college experience.
Love you all!**

Nicholas V.



Thank you for all of your support in this crazy journey. It's been a lot to learn, but I made it and it was definitely worth it!

Daniella V.





**Dedicating this to my
family in India!
Miss you all!**

Dinesh Premsudhakar V.

“”

**Thank you Mummy,
Pappa, Riya. This
achievement is as much
yours as it is mine.
And thanks to all my
friends for their support
throughout this journey.**

Kushal Darshankumar V.

I could never have known how great ASU was until I experienced it for myself. Thanks, Mom and Dad, for supporting me all the way!

Nicholas W.



**It was exciting to study
at ASU and get my
doctoral degree here.
Thanks to all my friends
and my lovely wife and
my adorable son!**

Bo W.



**Thank you to my father
and mother!
I love you all!**

Zhe W.

“”

**My experience at ASU
has been so incredible
and I owe my parents so
much for all they did to
get me here. Thank you
Mom and Dad!
Love, Thomas.**

Thomas W.



**Thank you Mom, Dad,
and my husband, David!
I love you all so much!**

Mathew W.

“”

**Thank you for being
patient Lisa.
I love you sooo much!
To the moon!**

Kevin W.

“”

Thank you to all my family and friends for the support and guidance, especially to my parents for believing in me, and Amanda for always being there.

Michael W.



**I wouldn't be here today
without you, my family.
Thank you!**

Ashley W.

“”

**I would like to thank my
incredibly loving family
who have supported
and encouraged me
throughout my life. I love
them with all my heart!**

Jorden W.





**A big thanks to my
friends and family.
Couldn't have done it
without you!**

George W.

“”

**Thank you to everyone
who supported me
through the years,
whether it was watching
kiddos, giving moral
support, or great advice.
I'll never forget it.**

Jarrod W.



**Four of the best years in
my life & I will treasure
them as they have made
me who I am today. I
can't wait to see what's
next for me!
Thank You SHPE!**

Jordan W.



**I couldn't have done this
alone. Infinite thanks to
my friends and family!**

Suzanne W.

“”

**To the one's I love, it's
been a long ride. 2 kids
and 6 years in the Army.
Here I am, and the day
finally came. I love you
and thank you for
the support!**

Gabriella W.



I would like to thank my family for all the support that they provided all these years. I would not be the outstanding person that I am without them.

Taylor W.



I could not be more thankful to you for supporting me growing up and through college. I am blessed to have such an amazing and loving family.

Christopher W.



**Thanks a lot for giving
me support on studying
here, in America.
Dear Mum, I love you!**

Chuantong X.

“”

**I could not get here
without the support
of my family.**

Thanks, Mom and Dad!

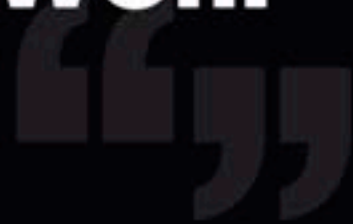
**Thanks to my friend in
the lab, especially, thank
you, Manqing!**

Chengen Y.



Thanks to all my family members for their support and understanding during the three years of graduate study. Many thanks to my advisors and ASU as well.

Qun Y.



To my beloved Mom and Dad, endless words to express my love to you. I hope that today, and every day in the future, you will always be proud of me.

Xinping Y.



**Thank you to my family!
Thank you father and
mother, I love you!
Thank you to my friends.
You guys gave me happy
times at ASU!**

Xiuqi Y.



**I am really thankful for
my parents granting
me the chance to study
abroad. I love them.**

Qi Z.

“”

**My special thanks go to
my advisor, Professor
Vittal, and my parents
who are far away in
China.**

Song Z.

“”

**Thank you Mom, Dad,
Jessica, and all my
friends. I love you all!**

Yiming Z.

“”

Thanks for all the support from my family and friends! Live a life of gratitude and be the best of yourself from this new start... as God is my witness.

Xuan Z.



**Thanks to my family far
away in China and dear
friends here to support
me and give me endless
love and power.**

Pu Z.

“”

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graduate adviser, and all
those people who gave
me help here.**

Xitong Z.

“”

