

# My Fruitful Journey through ENGINEERING

By Samuel To

SOME YEARS AGO, I WAS TALKING WITH A VIRGINIAN PASTOR. AFTER FINDING OUT THAT I WAS STUDYING IN THE SEMINARY AND CONSIDERING TO LEAVE MY ENGINEERING CAREER TO SERVE IN FULL-TIME CHRISTIAN MINISTRY, HE WAS TAKEN BY SURPRISE. WITH A BEWILDERED FACE, HE ASKED, "WHY? DON'T YOU LIKE YOUR JOB?"

In his mind, he could not understand why anyone would leave a "secure," satisfying job in the federal government for a "less secure" job in the ministry. I did enjoy my engineering career. The job was quite interesting. My work made a difference, and I even received awards for it. I was also able to organize Bible studies in departments where I worked. I am sure that I would have enjoyed working as an engineer for another twenty years so that I could qualify for my retirement benefits, that is, if I had not sensed the call to full-time ministry.

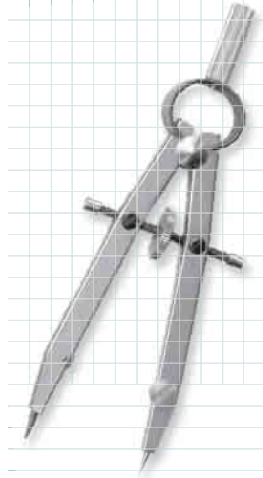
In a sense, my engineering career was "good to the last drop." For the last week, there were farewell luncheons every day. A few Christian colleagues even indicated that they would prayerfully support my ministry. I was thankful for such a pleasant conclusion to this chapter of my life.

Because of my engineering background and quiet personality, some people found my career change intriguing. At one farewell party, my branch secretary shared, "I can't believe that Samuel is going to be a hellfire and brimstone preacher. He's too gentle for that."

Well, I thank God for microphones. Through the many years of preaching, yelling to be heard was not necessary. After all, validating truth does not depend on the loudness of one's presentation. As the pastor of a church with a strong ministry to college students, I found that my engineering background strengthened my faith in God and enriched my insights about our world.

### Engineers encouraged my faith

When I was young, I was given the impression that Christianity was for the uneducated, the narrow-minded, the superstitious, the dying, etc. But studying engineering dispelled those false stereotypes. I met many fellow students and professors who were Christians. I realized that Christianity was also for the educated, the rational, and altogether vibrant, truth-seeking people.



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Studying engineering in Virginia Polytechnic Institute and State University was a refreshing eye-opener. I met many intelligent and considerate professors who taught me and guided me in my research for both my Master's in chemical engineering and my doctorate in environmental engineering. I was even more amazed that many of them were committed Christians. They manifested a comprehensive faith—not just going to church on Sundays, but living out their faith every day of the week. Not only were they competent in their engineering discipline, but they also knew the Bible well. Their lives showed me that the Bible is true and relevant to our everyday lives.

**Engineering strengthens my faith**

Even though I studied science and engineering, my Christian faith did not evolve through an intellectual pilgrimage through examining "evidences that demand a verdict." I had the privilege of growing up in a fourth generation Christian home. (It started with my great grandfather who became a Christian in San Francisco in 1860, through the first Chinese church in America.) As a result, I heard about Jesus when I was a child.

Since childhood, my faith was relatively simple. In a sense, such a child-like faith had unusual blessings. A child could enjoy the care of loving parents without understanding why. Likewise, one could enjoy the grace of God without extensive study in apologetics. Nevertheless, years of study and work in engineering helped me to see that the Christian faith is

rational and defensible. The orderly universe pointed me to an extremely intelligent Designer. Working with blueprints helped me to value the practice of exploring the intent behind the design. That mentality helped me to observe relevant biblical principles that guided my life. In other words, the Christian faith really made sense.

**Engineering helps me know the Designer**

Studying engineering sharpened my appreciation for the order of the universe. Actually, without such order, scientific research would be completely meaningless.

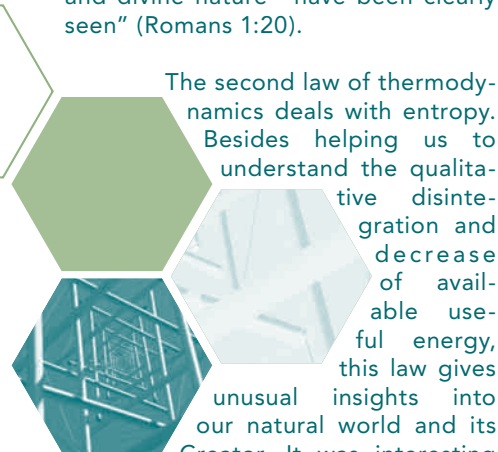
**The order in our diverse universe caused me to marvel at the wonders created by the Master Designer, and His intention behind the design.**

Such a complex yet orderly universe could not have come by chance. It was like what Isaiah said, "Lift your eyes and look to the heavens: Who created all these?" (Isaiah 40:26)

In engineering, one spends many years studying and applying the laws of thermodynamics. Knowing those laws enables the engineer to harness energy to produce work. The laws are extremely valuable for engineering designs.

Amazingly, they also enriched my insights about our Creator. Believing in a Creator for our universe is not a blind leap of faith, but is compatible

with science. It is just as Paul said: "For since the creation of the world, God's invisible qualities—his eternal power and divine nature—have been clearly seen" (Romans 1:20).



The second law of thermodynamics deals with entropy. Besides helping us to understand the qualitative disintegration and decrease of available useful energy, this law gives unusual insights into our natural world and its Creator. It was interesting to read similar assertions in a thermodynamics textbook that was used in many engineering schools for over three decades:

"The authors see the second law of thermodynamics as man's description of the prior and continuing work of a creator, who also holds the answer to the future destiny of man and the universe." (Gordon J. Van Wylen & Richard E. Sonntag, *Fundamentals of Classical Thermodynamics 2nd ed.* N.p.: John Wiley & Son, 1973, 248. Both authors were professors in the Department of Mechanical Engineering in the University of Michigan. Similar quotes also appear in earlier and subsequent editions.)

**Engineering helps me focus on our best design use**

In the design of machines or structures, such as bridges, there is usually

a design life. The design life delineates the extent of useful life under normal usage. Along the same line, we are reminded that each of us also has a design life, that is, the extent of our own lives. Everything in nature is actually following the second law of thermodynamics; everything decays, ages, wears out, and eventually dies.

Some years ago, the author of Ecclesiastes reminded us, "Remember your Creator in the days of your youth, before the days of trouble come" (Ecclesiastes 12:1). It does not mean that older people do not need to remember the Creator. But it does mean that the earlier we know the Creator, the more we can make the best use of our lives for eternity.

Engineers often work with engineering drawings called blueprints. The plans and specifications on the blueprint reflect the intent of the designer. They need to be followed in order for buildings to be properly constructed and equipment accurately made. Likewise, the Bible is like our practical "blueprint for living." Through it, we learn about the kind intent of our Creator. God is not a kill-joy Creator. He actually wants us to have the full life (John 10:10). Reading the Bible helps us get hold of that full life through knowing Jesus Christ. Studying it regularly will help us get the best design use for our life. ☺



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