Zhengda He
Chemistry & Biochemistry

Learning Love from Science

The Office of Postdoctoral Affairs
The Graduate School | Florida State University
Unlimited Energy

Sunshine

Water
Water $\rightarrow$ Oxygen gas $\rightarrow$ Hydrogen gas $\rightarrow$ Water

Release electricity

$\text{Electron}$
Ideal material

Highly active

Stable

Cheap
Existing material

Pt

Ir

**Price per kg**

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<th></th>
<th>Ti</th>
<th>V</th>
<th>Cr</th>
<th>Mn</th>
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Potential material family – Single-Atom Catalyst

1. Carbon is one of the most abundant element on earth
2. It only requires one metal atom
Lady Anna

Smart, kind
Wonderful girl

Hydrogen atom (H)
As adsorbate
Lady Elsa

Active, strong,
Little bossy

Hydroxyl (OH)
As adsorbate
They both want to find

Unconditional love

(the love never changes no matter what happens)
“Love Index”

A measure for the power of love

“Unconditional love”

Love index remains constant
Lady Anna

Love

Highly influenced by family and peers

Unconditional love

Gentleman (Metal atom)
Lady Elsa

All highly influenced by family and peers

Love Index

Sc Ti V Cr Mn Fe Co Ni Cu Zn Y Zr Nb Mo Ru Rh Pd Ag Cd La Hf Ta W Re Os Ir Pt Au
Why are men so different?

Why can’t I find unconditional love?

Love expert
“You will find unconditional love if there is still place in the gentleman’s heart which he has total control.”
Structure of the heart

- Negative influence by Peers
- Gentleman’s own thoughts
- Positive influence by Peers
“The unconditional love can only come from our own decision”

“Do not push too hard.”
“How to find unconditional love?”

Love expert

Negative influence by Peers

Gentleman’s own thoughts

Positive influence by Peers

Empty space

Unconditional love
Science Rocks!!!
The End