Assignment 3

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Abstract—**This document balances the given chemical equation.**

Download all python codes from

https://github.com/Matish007/Matrix−Theory−
EE5609−/tree/master/Assignment_3/codes

and latex-tikz codes from

https://github.com/Matish007/Matrix−Theory−
EE5609−/tree/master/Assignment_3

1 PROBLEM

Balance the following chemical equation:-

$$BaCl_2 + H_2SO_4 \longrightarrow BaSO_4 + HCl \qquad (1.0.1)$$

2 EXPLANATION

$$\boxed{BaCl_2} + \boxed{H_2SO_4} \longrightarrow \boxed{BaSO_4} + \boxed{HCl} \quad (2.0.1)$$

Element	Atoms in reactant(LHS)	Atoms in Product(RHS)
Ba	1	1
Cl	2	1
H	2	1
S	1	1
O	4	4

From the table we can see that except H and Cl ,all other elements are balanced.So first lets balance the Cl atoms.

Atoms of Chlorine	In reactants	In products
(i) initial	2.in $BaCl_2$	1. in HCl
(ii) To balance	2x1	1x2

Applying the following changes in equation we get:-

$$\boxed{BaCl_2} + \boxed{H_2SO_4} \longrightarrow \boxed{BaSO_4} + 2\boxed{HCl} \quad (2.0.2)$$
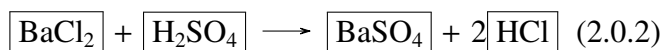
It can be seen that while balancing the Cl,H also balanced.Now,all atoms are balanced.
So,(2.0.2) is the required balance equation