**2.3 DH in 3DOF and 4DOF:**

As an example, consider a 6-DOF manipulator (Stanford Manipulator) whose rigid body and coordinate frame assignment are illustrated in Figure 3. Note that the manipulator has an Euler wrist whose three axes intersect at a com- mon point. The first (RRP) and last three (RRR) joints are spherical in shape. P and R denote prismatic and revolute joints, respectively. The DH parameters corresponding to this manipulator are shown in Table 1.

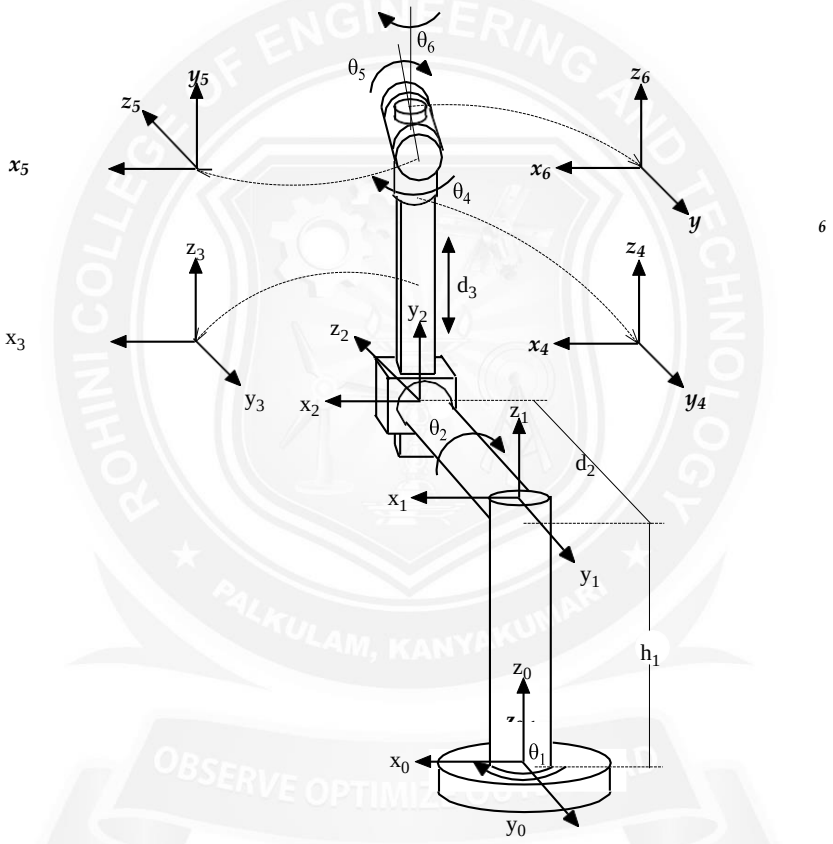


Figure 3. Rigid body and coordinate frame assignment for the Stanford Manipulator.

| i | $\theta_i$ | $\alpha_{i-1}$ | $a_{i-1}$ | $d_i$ |
|---|---|---|---|---|
| 1 | $\theta_1$ | 0 | 0 | $h_1$ |
| 2 | $\theta_2$ | 90 | 0 | $d_2$ |
| 3 | 0 | -90 | 0 | $d_3$ |
| 4 | $\theta_4$ | 0 | 0 | 0 |
| 5 | $\theta_5$ | 90 | 0 | 0 |
| 6 | $\theta_6$ | -90 | 0 | 0 |

Table 1. DH parameters for the Stanford Manipulator.