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S3 S2 S1

Structural Features of Granitoid Body and Metamorphic Rocks in Boroujerd Area

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Abstract

The Boroujerd granitoid similar to most of the granitoids in world has one foliation that is parallel to country rocks. Microscopic characters show that this foliation is not magmatic but occurred to solid-deformation in high temperature. S-C structures and shear banded together improved cataclastic in outcrop show that the motion of shear zones continues to reduce temperature and brittle deformations over than ductile deformation. Faults are the most important macroscopic structures in area, so these cause different metamorphic facies in two sides of pluton and cause to asymmetry in metamorphic areola. These structures have three trends, one set similar to Zagros trend that mine veins and aplites occurred in this trend. Second set is almost perpendicular to Zagros trend that mine veins and the some of the basic and intermediate dykes occurred in this trend. The third set with southern-northern trend which isn't widespread in the studied area. The large folding is another important macroscopic structures that the variety of schistose pole in different points in area imply that these are numerous. At least three deformation phases or different folding and planed structures S1, S2, S3 occurred that the second deformation is the major episode in the area.

Keywords: Deformation, Macroscopic structures, Shear zones, Granitoid, Boroujerd.

MA1, MA3, GM5)

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ICP-AES

ALS Chemex

ICP-MS

Sample	GM5	MA3	MA1
SiO2%	67.2	71.4	40.2
TiO2	0.5	0.3	0.6
Al2O3	15.5	14.7	27.2
Fe2O3 t	2	1	3.7
MnO	0	0	0
MgO	3.9	2.9	14.2
CaO	0.7	0.3	0.1
Na2O	4.2	4.8	0.2
K2O	1.4	1.3	5.6
P2O5	0.2	0.1	0.1
Ni(ppm)	18	12	17
Cr	40	20	30
Co	41.9	55.3	11
V	55	31	79
Cs	0.9	0.5	1.1
Rb	29.3	40.8	137.5
Sr	65.9	26.9	13.8
Ba	172.5	80.2	274
Th	23	23	36
U	1.6	2.2	3
Ta	1.2	1.5	2.5
Nb	16	13	24
Hf	6	5	9
Zr	210	147.5	298
Zn	18	10	25
Ga	15	15	34
Sn	2	2	6
W	420	550	6
La	28.6	52.3	129.5
Ce	52.2	94.1	212
Pr	6	10.6	21.5
Nd	21.2	35.8	70.8
Sm	3.9	6.3	9.6
Eu	0.2	0.6	1.2
Gd	3.7	5.7	9
Tb	0.5	0.8	1.1
Dy	2.7	4.5	5.7
Ho	0.6	0.9	1.3
Er	1.6	2.8	3.6
Tm	0.2	0.4	0.6
Yb	1.5	2.7	3.7
Lu	0.2	0.4	0.6
Y	15.2	27.8	33.8
Eu/Eu*	0.2	0.3	0.33
(La/Yb)N	12.7	13	12.6

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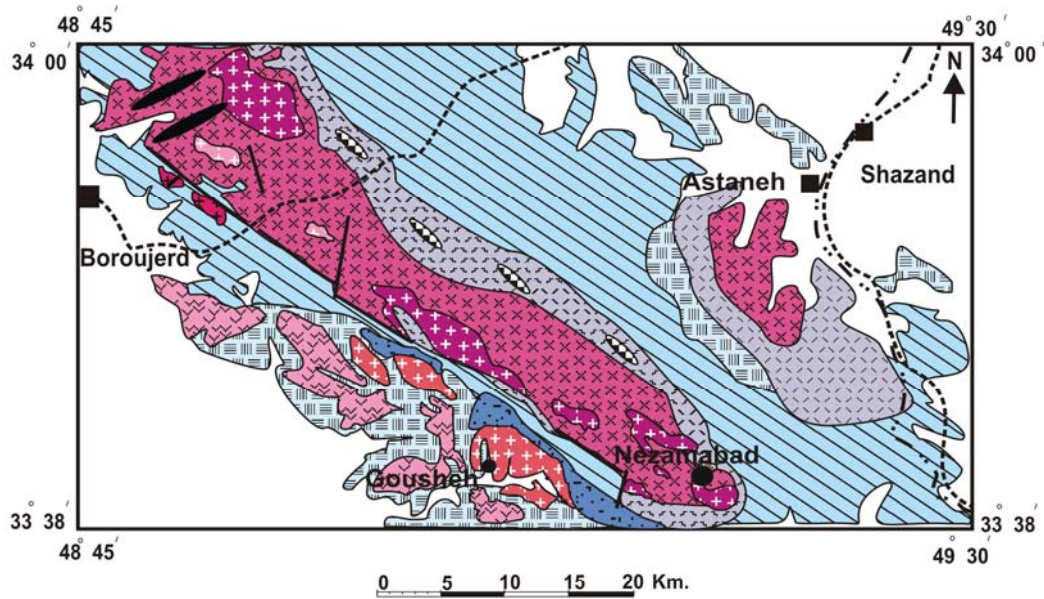
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Legend

Metamorphic Rocks

(Middle Jurassic)

Contact metamorphic

(Upper Triassic-Lower Jurassic)

Hamadan Phyllite

Micaschists, Marble, Amphibolites

Metasandstone

Metavolcanics & tuff

Symbols

- Town
- Village
- Road
- Railway
- Fault

Quaternary

Alluvium

Intrusive Rocks

Basic dikes

Gousheh granite (Late Eocene)

Monzogranite

Boroujerd Granitoid Complex (Middle Jurassic)

Acidic dikes

Sphene granite

Monzogranite

Granodiorite

Quartzdiorite

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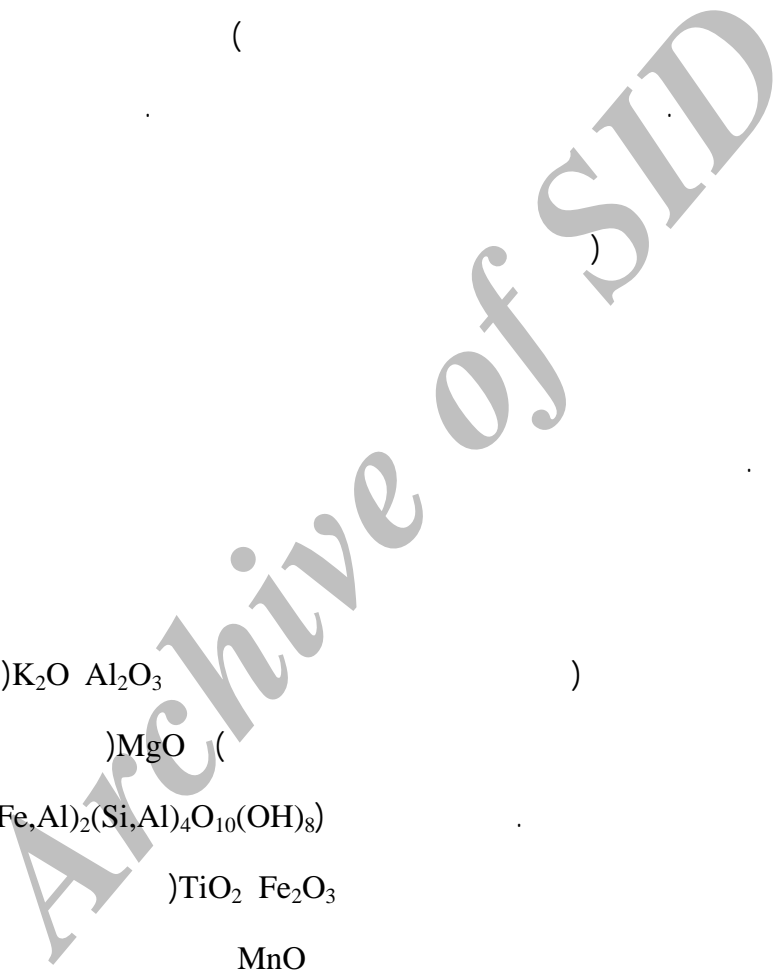
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 XRD (D-F)
 XRD
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)K₂O Al₂O₃)
)MgO ()
 (Mg,Fe,Al)₂(Si,Al)₄O₁₀(OH)₈
 ()TiO₂ Fe₂O₃
 MnO
 Cr Co Ni
 Zr, Zn, Sn, Cs, Th, Nb, Ga, V, Ba, Rb, Hf



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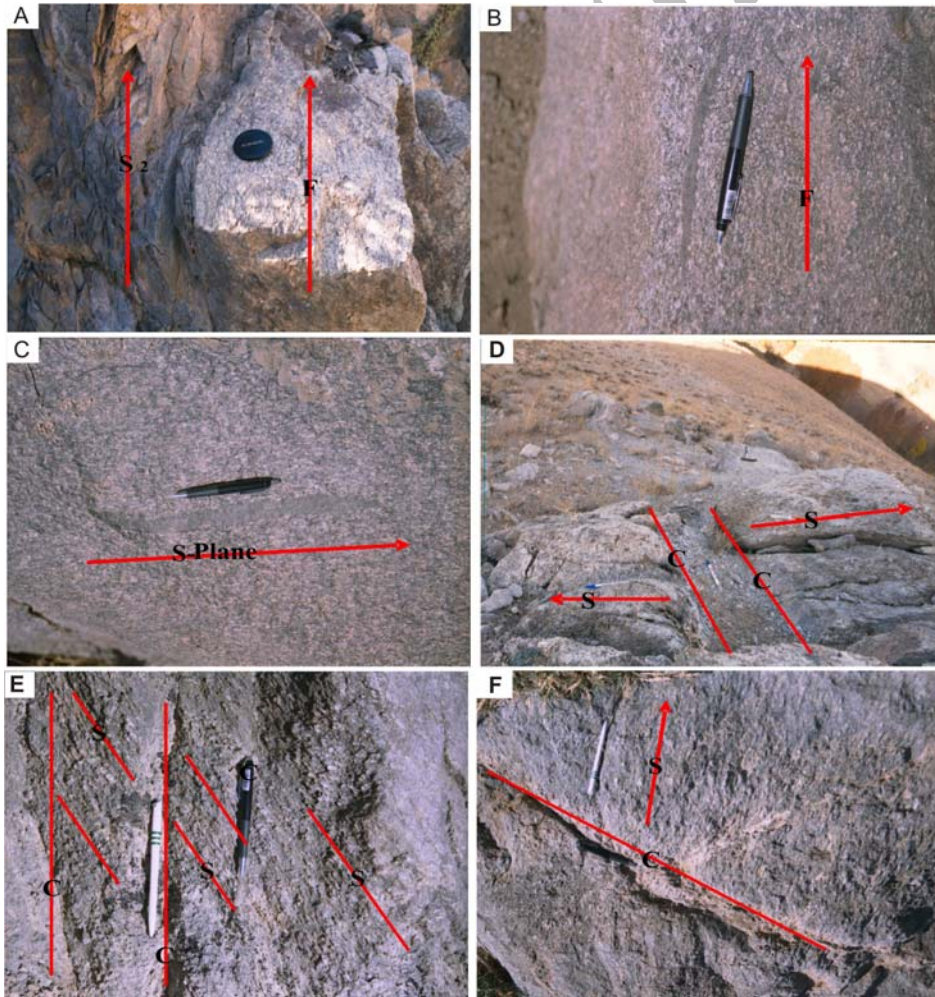
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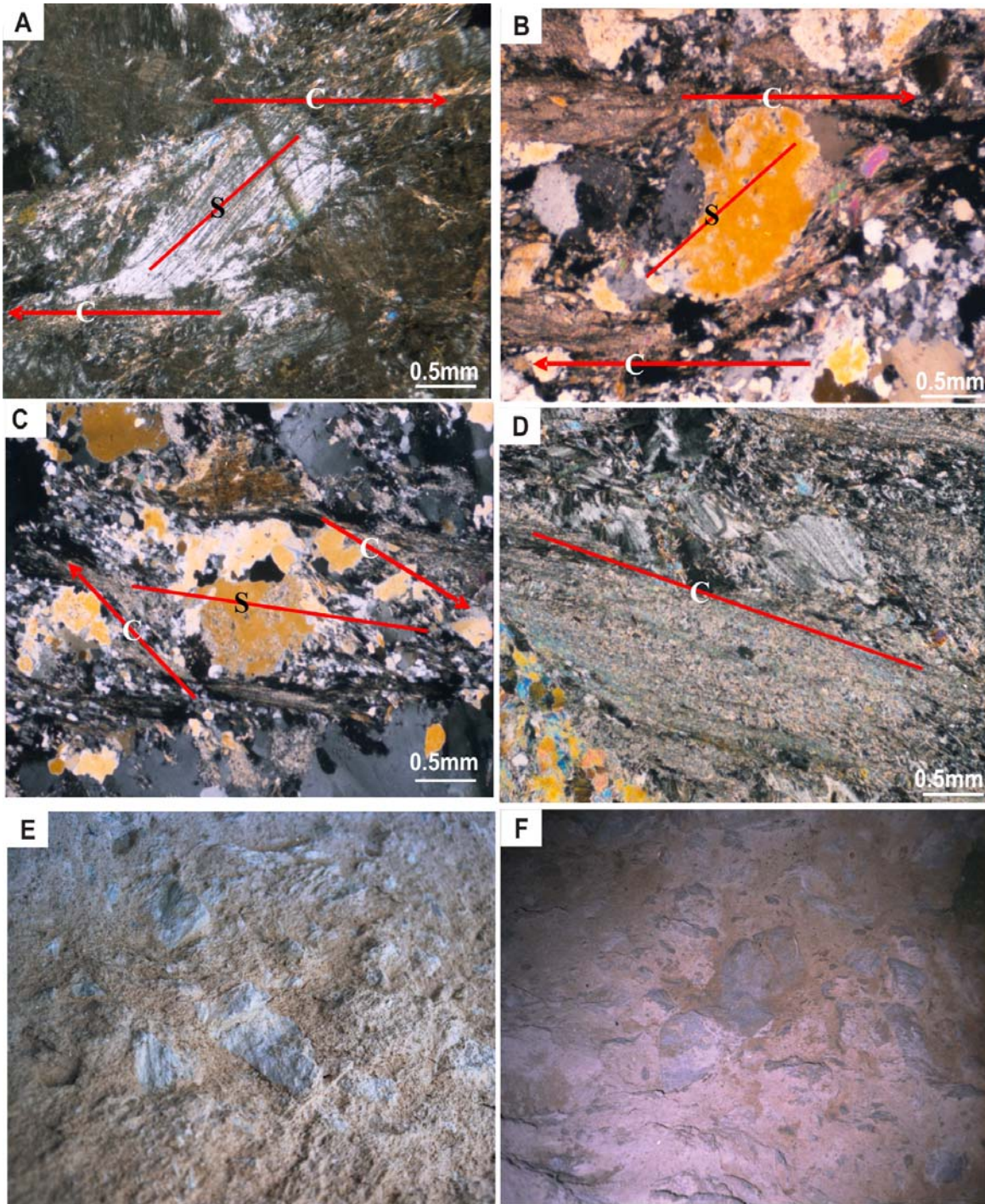
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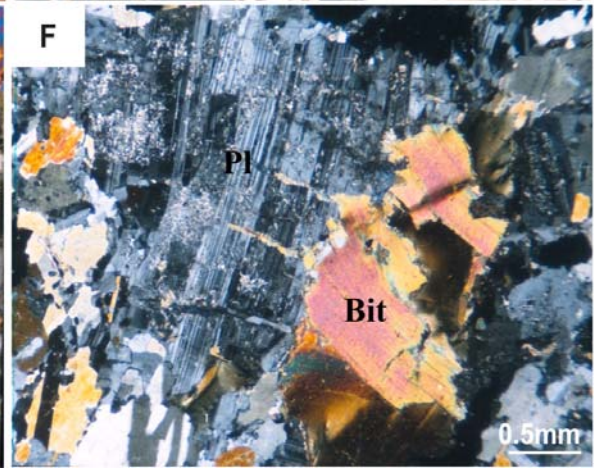
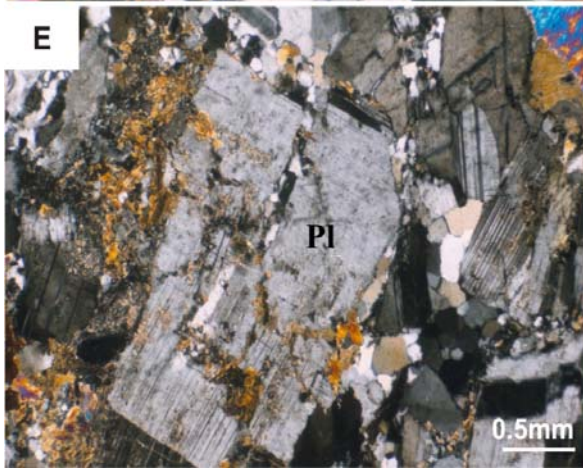
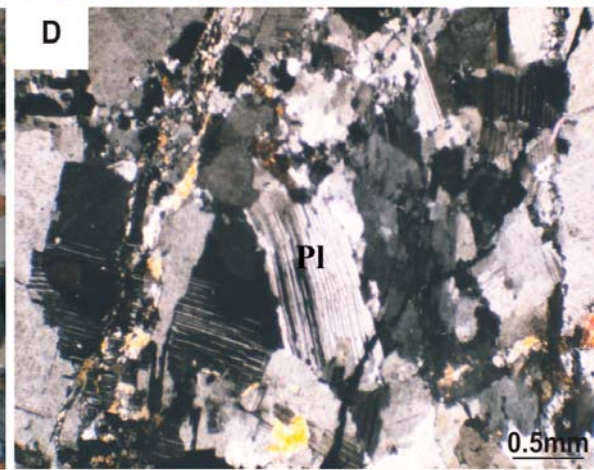
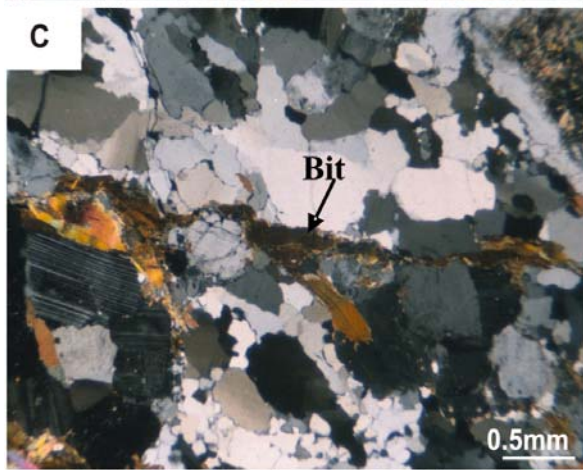
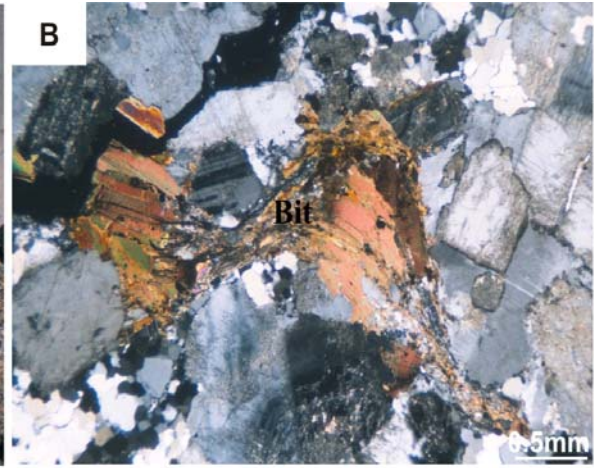
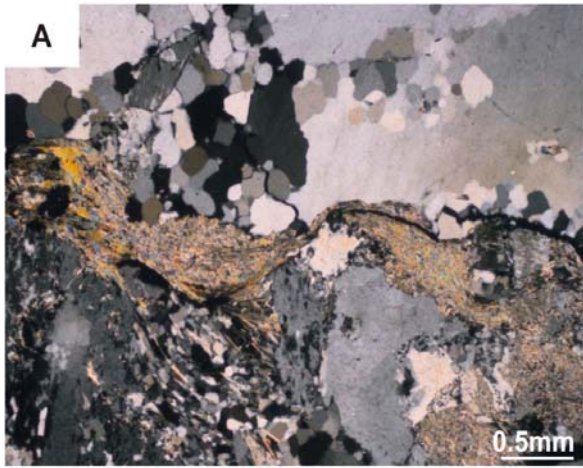
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(A) S-C (B)
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(D-F)

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S1

S2 S1

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S3 S2 S1

(D-H)

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S2

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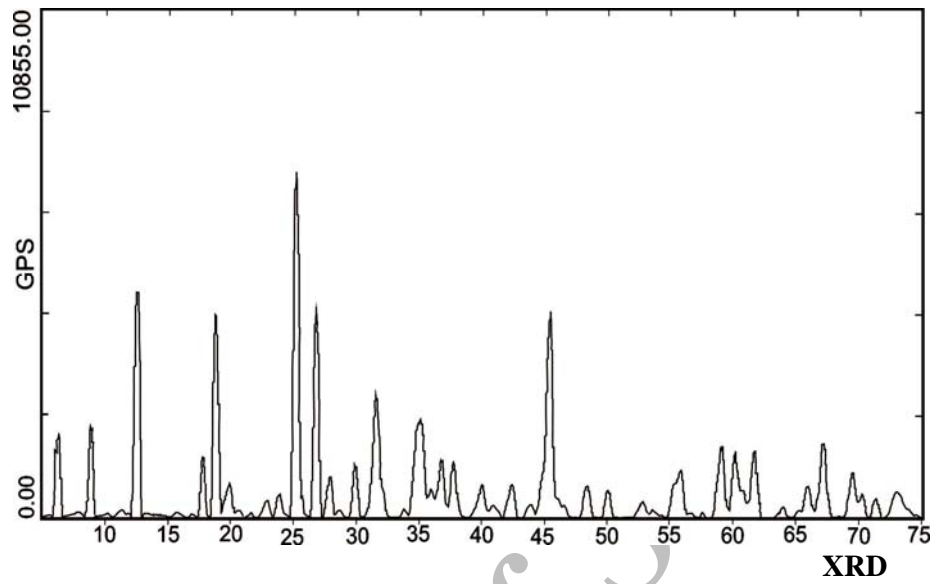
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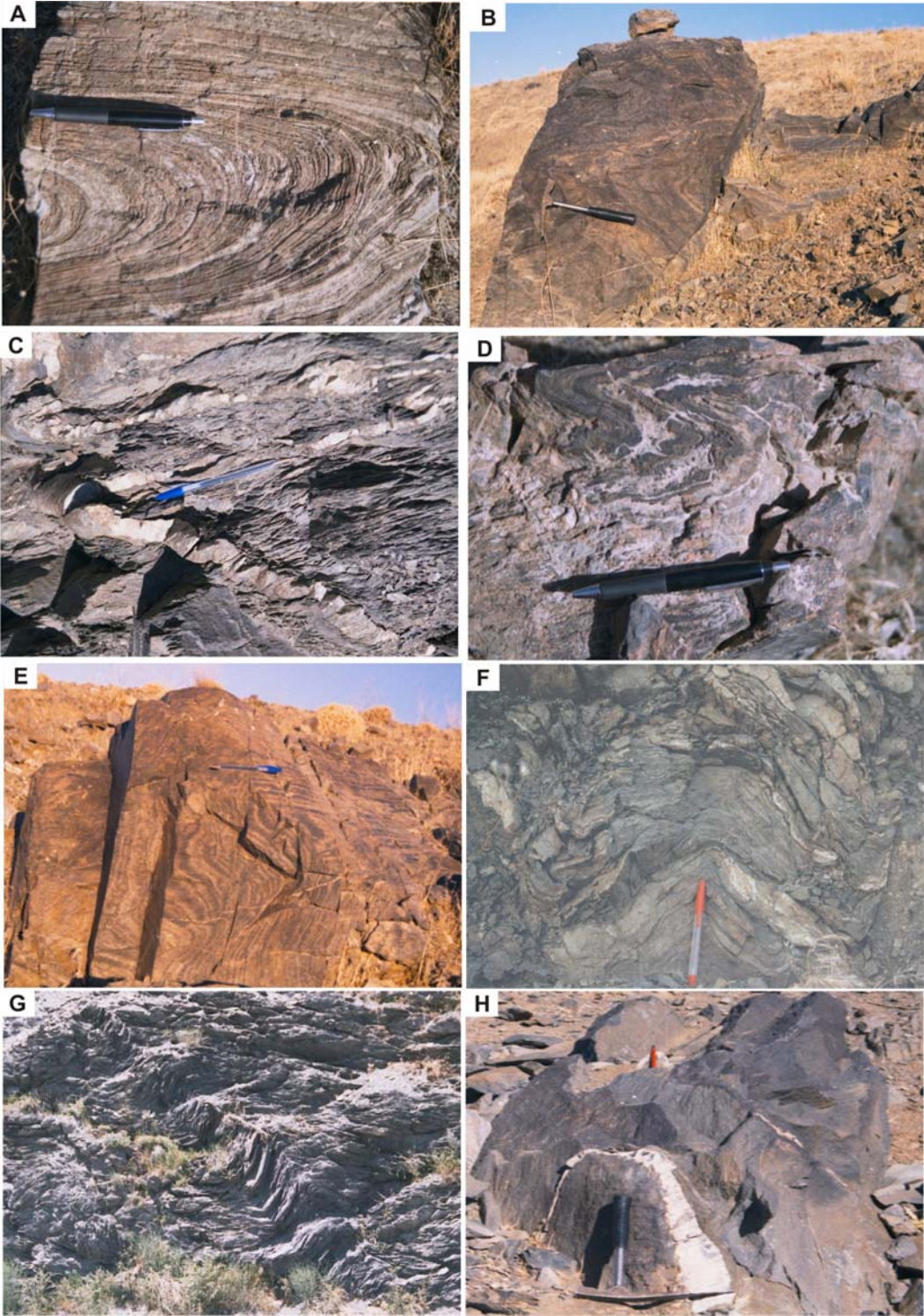
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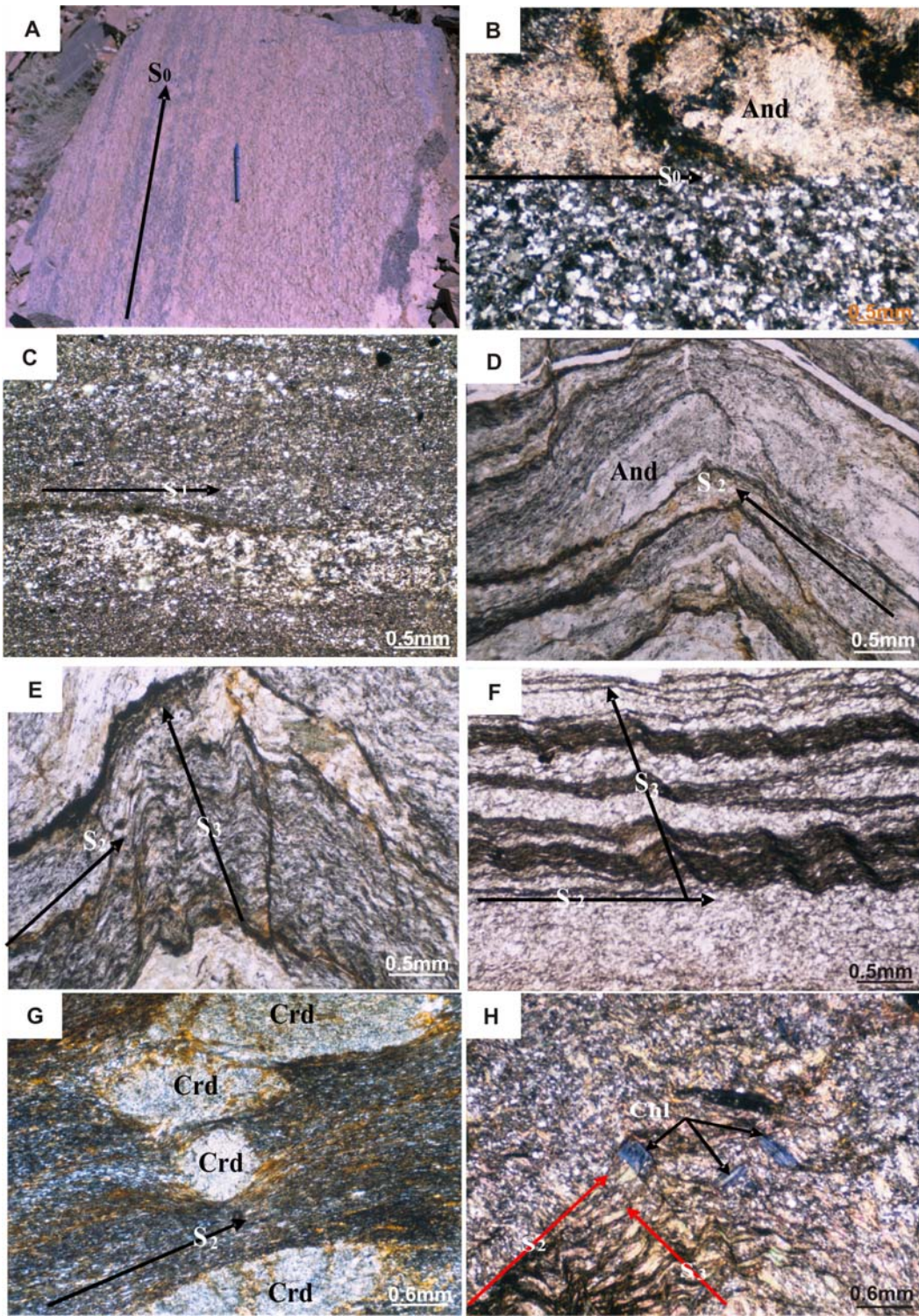
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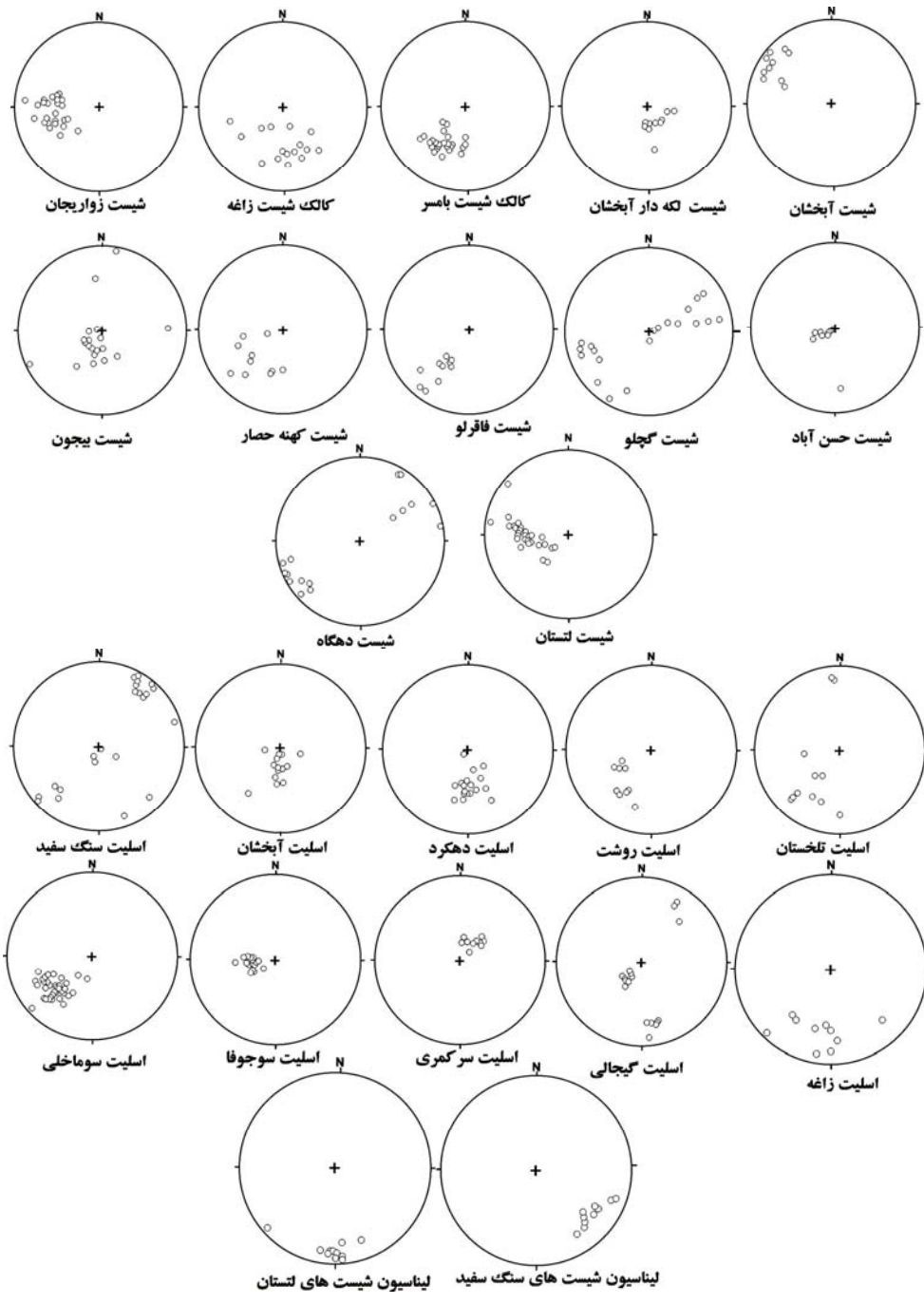


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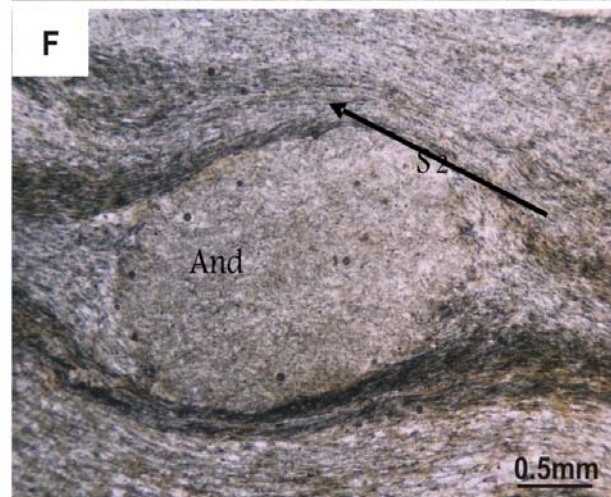
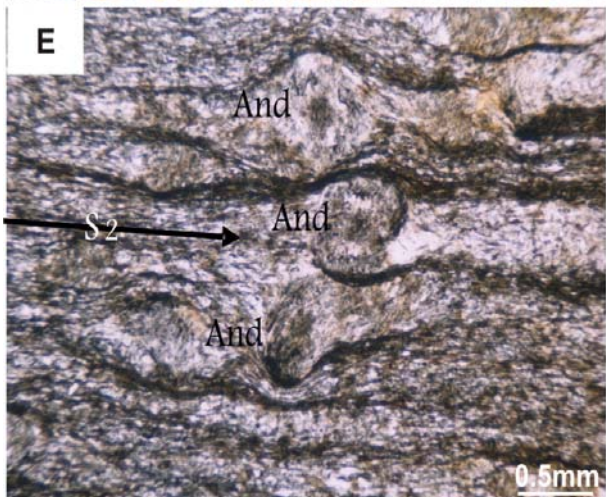
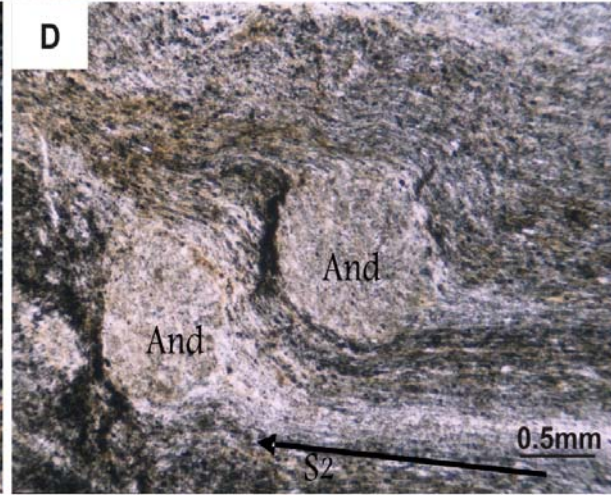
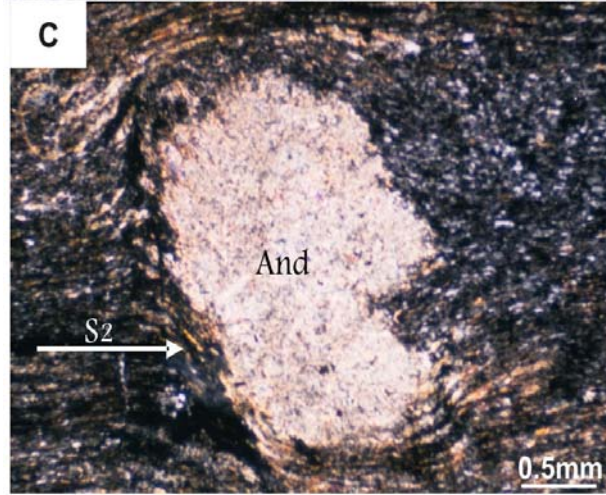
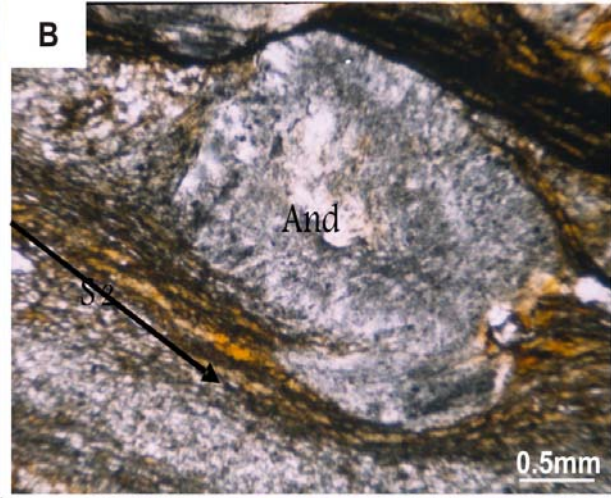
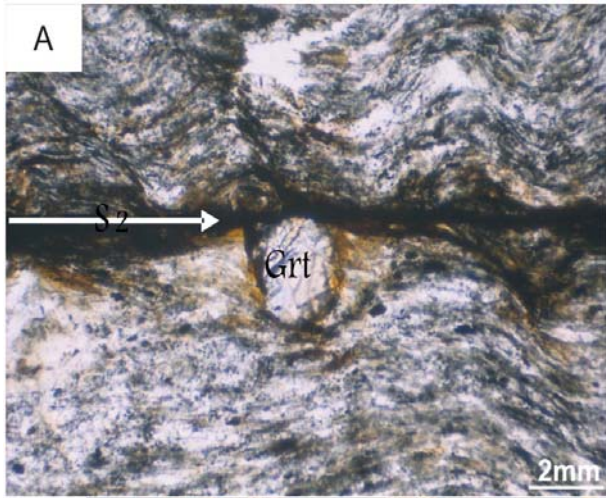
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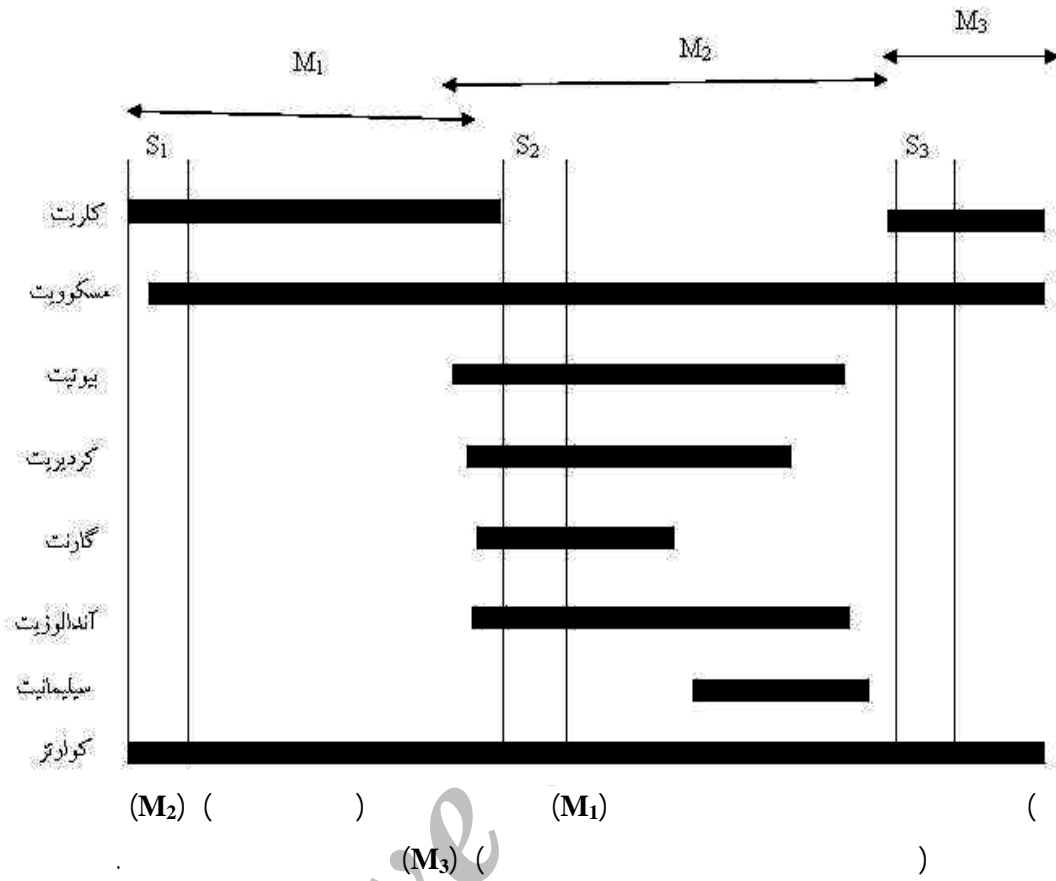


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