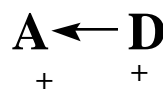
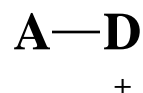


# VARIATIONS IN CATION-DINITROGEN INTERACTIONS

## Covalent Bonding

## Dative Bonding

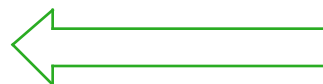
## Electrostatic Bonding



electrostatic interaction  
strong charge transfer delocalization  
strong exchange delocalization

some electrostatic interaction  
some charge transfer delocalization  
some exchange delocalization

electrostatic interaction only  
no charge transfer delocalization  
no exchange delocalization

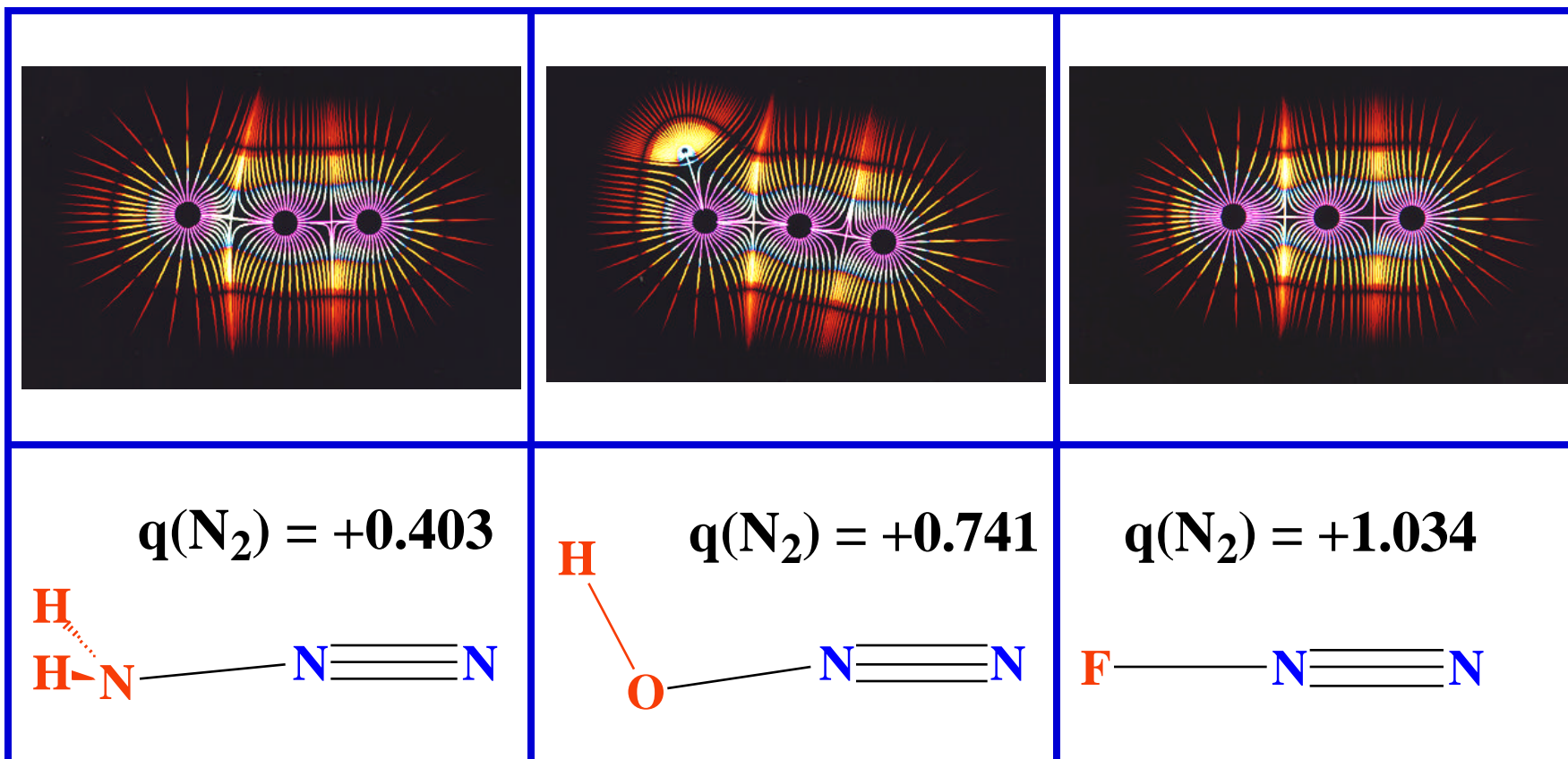


increase acceptor electronegativity  
decrease donor electronegativity  
reduce A(LUMO)-D(HOMO) gap



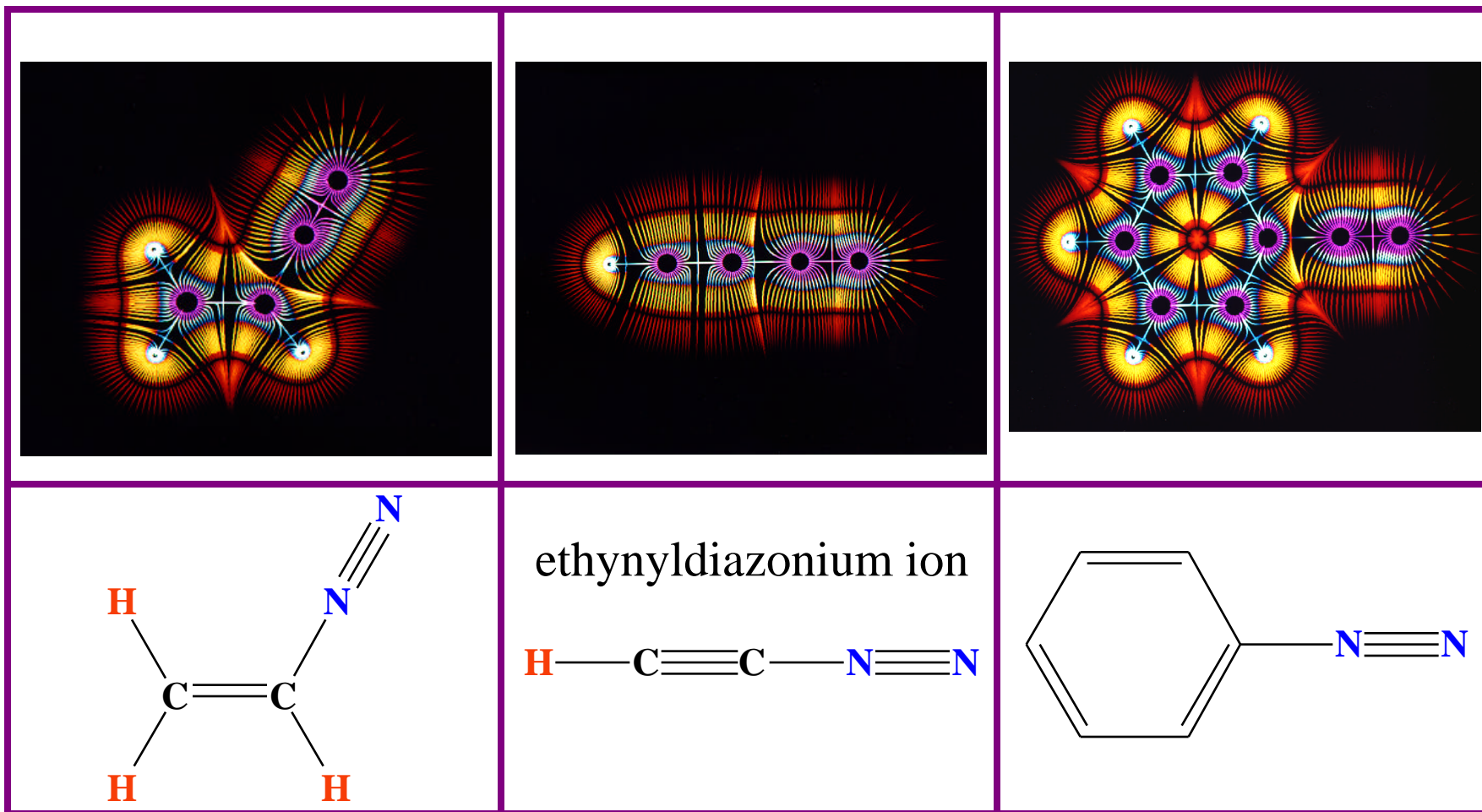
# Covalent Bonding ...

... in Hetero-Substituted Diazonium Ions  $XNN^+$



# Dative Bonding ...

... in Alkyl- and Aryl-Diazonium Ions  $RNN^+$



# Electrostatic Bonding ...

... in Benzyldiazonium Ion  $\text{BzNN}^+$

